# ATHLETIC JOURNAL

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The Fundamentals of Inside Screening
Ellison E. Ketchum

Championship Basketball
H. E. Foster
Everett F. Shelton
H. C. Carlson, M. D.
Herman Littman
Edward D. Hall

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VOLUME XXII

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NUMBER 4

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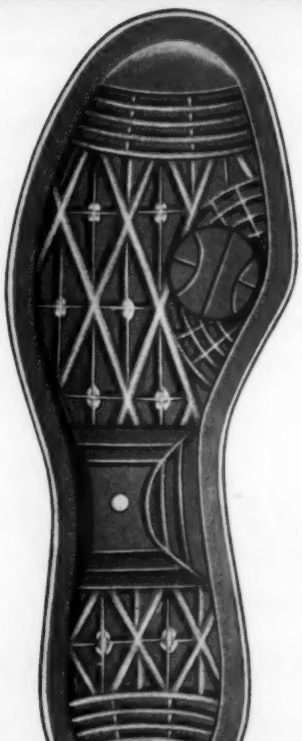

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Facsimile of original painting of Dr. James Naismith, father of basketball, executed in oils by Lon Keller, famous painter of sports figures.

The first basketball team, consisting of nine players and their coach, on the steps of the Springfield College gymnasium in 1891. Reading from left to right, back row, John G. Thompson, Eugene S. Libby, Dr. Edwin P. Ruggles, William R. Chase, T. Duncan Patton. Center row, Frank Mahan and Dr. James Naismith. Front row, Finlay G. MacDonald, William H. Davis, Lyman W. Archibald.

# The Golden Jubilee of Basketball

NO sport in the category of competitive pastimes has grown and flourished as has basketball in the brief span of years during which it has been in existence. Only fifty years ago Dr. James Naismith, then a young instructor at Springfield College, was given the assignment by Dr. Luther Gulick, head of the physical education department, to invent a pastime that contained all the excitement and drama of football, yet had none of the gridiron game's bruising contact. While puzzling over the assignment, Dr. Naismith came to the conclusion that the goals should consist of wooden boxes, eighteen inches square. On the way to the cellar where he hoped to find them he ran across Mr. Stebbins, the genial janitor of the college. Asked if he could supply the boxes, Mr. Stebbins told Naismith that he had none available but he did recall having two peach baskets in the cellar which might suit the purpose. Something of an opportunist, Naismith accepted the baskets in place of the boxes, proceeded to tack them up on the lower rail of the balcony in the Springfield gymnasium, and selected two teams of nine players each to play the game. From that humble beginning of two peach baskets supplied by a willing janitor, sprang the entertaining and appealing pastime of basketball.

That the game has kept pace with the time has been evident from the tremendous surge of popularity which it has experienced in recent years due to the wisdom and far-sightedness of the Rules Committee. Instead of allowing the game to be shackled by those who retarded its development for years, the Rules Committee enhanced the game immeasurably by speeding it up and by ruling out the cen-

ter tap. Today palestras and gymnasia throughout the country are jammed to the doors on the occasion of interesting games. Never before has basketball proved such a drawing card as it is at present.

Just as baseball and football have honored their founders, basketball this year will pay lasting tribute to the man who invented the game, in a manner which will immortalize him among the sport figures of all time. The Museum and Hall of Fame which will be erected in Dr. Naismith's memory at Springfield, Massachusetts, will give permanency and form to the ideals and traditions of the game and will provide an edifice, in the archives of which will be preserved forever the records and accomplishments of outstanding players and teams.

From Maine to Washington and from Florida to California, basketball teams in all groups including colleges, high schools, professional, A.A.U., Hebrew organizations and Y.M.C.A.s are designating one of their regularly scheduled contests as a Golden Ball Game, the receipts of which are to go to the Naismith Memorial Fund. Never before has basketball united all its forces to honor its founder. Not only will Golden Ball games be played in this country, but in Canada, Puerto Rico, South America, Alaska, Cuba, Hawaii and other countries as well. No basketball team or player, no enthusiast, old or young, will be denied an opportunity to do his part for the game that has given so much pleasure to all.

In connection with the Golden Jubilee campaign, a beautiful 36-page Naismith Memorial program is being published. This comprehensive book will contain articles by famous coaches and writers, and will provide the fans with a permanent souvenir of the Golden Jubilee. It will be sold at all Golden Ball games throughout the country.

Every team that contributes to the Naismith Memorial by playing a Golden Ball game will have the record of its game together with a photograph of the team placed in the Hall of Fame. Sport figures the world over, particularly those affiliated with basketball, are co-operating whole-heartedly in this enterprise.

The Golden Jubilee campaign was inaugurated on October 14 with a luncheon at the Hotel Waldorf-Astoria in New York City. Present were Mayor Roger Putnam of Springfield, who is active in sponsoring the campaign, many well-known writers and sports figures, and three members of the original team formed by Dr. Naismith in 1891—T. Duncan Patton of Toronto,

*(Continued on page 26)*

# The Fundamentals of Inside Screening

***By Ellison E. Ketchum***
**Basketball Coach, University of Denver**

AFTER he has coached basketball for several seasons, almost every coach concludes that, above all else, he must work toward simplicity in offense. At the same time, he probably feels that his former teams have been over-coached from the standpoint of play situations, and under-coached from the standpoint of mastery of a few simplified maneuvers.

Almost everyone agrees that the best play in basketball is still the *pass and cut for a return pass*, and there is no reason why, in effecting this play, the man who is cutting should not also be taught the fundamental principles of screening. Then instead of *pass and cut for return pass*, a play is worked out which would best be described as *pass, cut, screen and roll for return pass.*

The accompanying pictures show the simple fundamentals of inside screening with the resulting situations. It must be understood, however, that the primary situations which result from the *pass and cut for return pass* are not included in these pictures.

Whenever a screen, be it moving or otherwise, is used, pressure is put on the defense which demands a switch of assignment on the defensive team. If the offensive man screening is alert and understands the principle of the roll, there is still a play situation open as a result of the original screen.

Mastery or faultless execution plus timely selection of the option to be exercised in this situation will result in a perfect offense against a man-for-man type of defense. This maneuver is best taught by the simple two-versus-two drill, one offensive man assuming the post position and the other assuming an outside cutting position. This drill is beneficial in teaching proper defense aganst this offensive weapon.

In Illustration 1 this drill is set up. The offensive men in dark suits are in position to utilize best this maneuver. The post man, Number 19, is facing in. This has a tendency to loosen up the defensive player and thus greatly lessens interception hazards. The offensive player is in a position to pass off, to pass into the post, or to pivot back and drive in with the aid of a dribble.

Illustration 2 shows the post man, who has stepped out to receive the ball and is in position for either the inside or outside screen. Number 18, the outside offensive player, has started in on a screen maneuver. The defenders are in defensive position.

In Illustration 3 the post man has returned the ball to his team mate who has screened off his guard on the post man. The defensive man covering the post has switched off to cut off the driving offensive player. Note the position of advantage which the post player has over the defensive player who must now cover him as a result of the switch.

Illustration 4 shows the position of post player Number 19, who has rolled off toward the basket and received a return hook pass from Number 18, whose drive to the basket was stopped by the defensive switch. Defensive player Number 5 is a full step behind the pivot man whom he is forced to cover as a result of the switch. Post man Number 19 is now open for an easy drive in and lay-up.

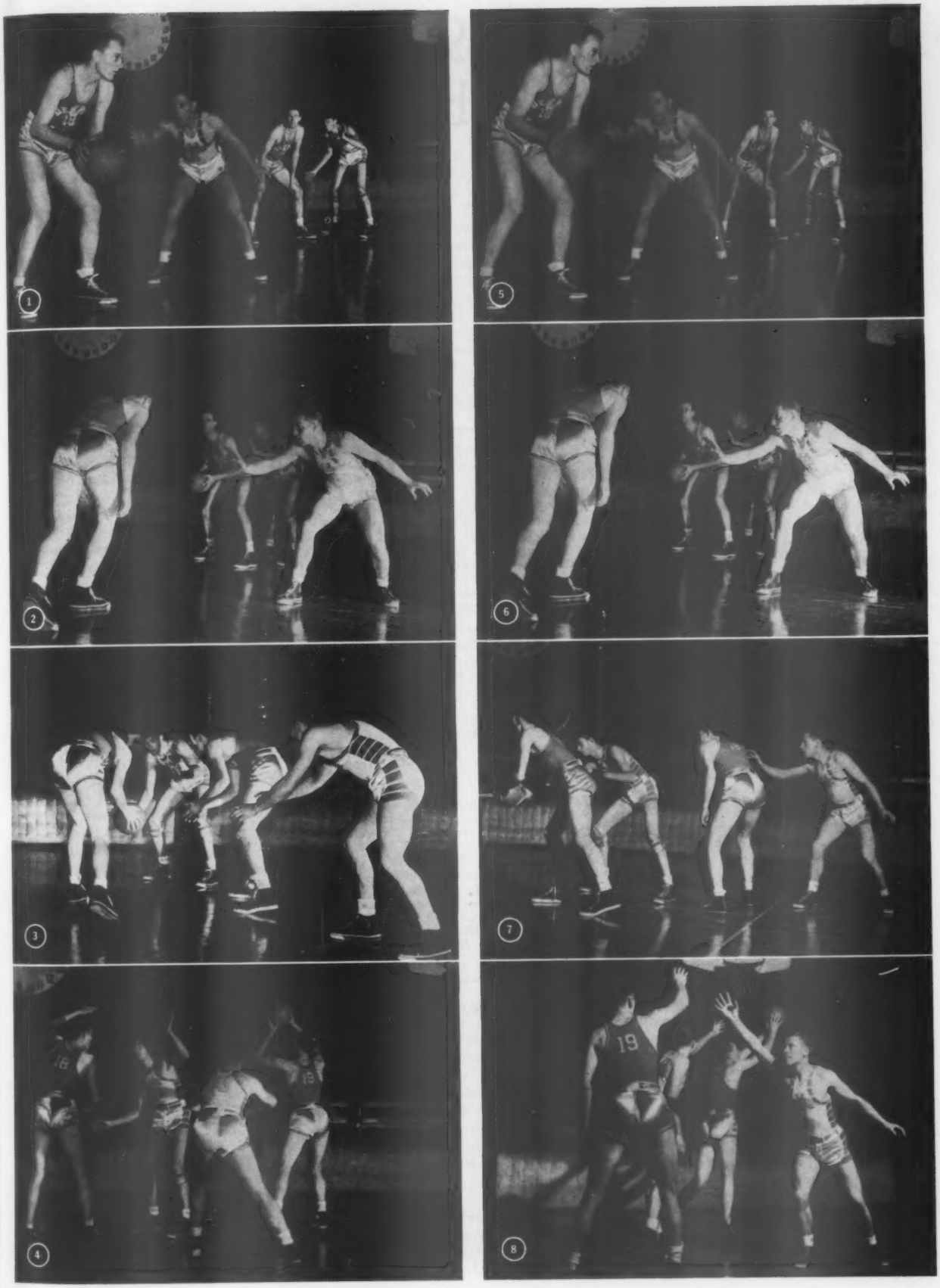
Illustration 5, the same as Illustration 1, shows the start of the screen to the inside of the post man.

Illustration 6 shows the post man in possession of the ball, and the screen is under way. Note that the initial maneuvers for the screen to the inside of the post man are the same as those to the outside, the post man being used as a screen.

In Illustration 7, Number 18 is in screen position inside the post man who has faked a drive to the outside, setting up his defensive guard for the screen. Both defenders are in fair position.

Illustration 8 shows the completion of the play. Number 18, the post man, has driven back to the inside, forcing defensive player Number 5 to switch over in order to stop his drive toward the basket. Number 16 now has rolled off toward the basket, having a position of advantage over the defending player who was forced to pick him up from behind as a result of the switch.

These maneuvers are a result of the switch necessitated by the screen. The original play situation would, of course, be just as valuable as these resulting play principles.



# Meet the 1941 College Championship Coaches

## Old-Fashioned Basketball at the University of Wisconsin

*By H. E. Foster*
**Basketball Coach**
**University of Wisconsin**

MUCH has already been written about the 1941 edition of the University of Wisconsin's basketball team. Most of the articles have dealt with the question, why should a team that won only five out of twenty games in 1940, win twenty out of twenty-three games in 1941; win the Western Conference championship; the N.C.C.A. championship; score over one thousand points; and win the last fifteen games.

My answer to the question is good material, a fine squad, morale, courage, desire, spirit and the knowledge of a fairly sound system of offense and defense. The Wisconsin Badgers had these things and good results rained down on them as the season went along. I am like any other coach who thinks his system or style has been sound all along, but some years certain of these essentials have been lacking and a winning team is a combination of all of the above elements.

Before discussing the Wisconsin style of play, I want to mention the boys on this team. By the end of the season each man was fairly well recognized as a specialist in some fundamental of the game. Gene Englund, our center and high scorer, was the best under-basket man in our league, both on defense and offense. John Kotz, our left forward, was the best sophomore forward in the Big Ten. He was a good floor man with a great pair of hands for passing as well as shooting and he always did his share on rebounds. Both of these boys were game breakers and, if we needed a basket, one or the other usually came through with one. Fred Rehm, a high school center, was used as guard and I think he was the best defensive rebound man in the league. Ted Strain, a guard, was our one fast man on the squad and he did a great job in advancing the ball, driving through for short shots or staying out and taking pots at the basket. Other than this, he was our quarterback and set the pace of the game. Last, but not least, was our right forward, Charley Epperson. He was an important part of the team and fitted into the group, always doing his part so that our play developed. There were capable reserves on this squad, too, and usually any replacement did a fine job.

We at Wisconsin are still playing old-fashioned basketball. Since the day Dr. W. E. Meanwell came to Wisconsin, in 1911, we have had success with a set style of offense. As changes have come into the game, we have stuck to our guns, working on an offense that we thought was the best way to play the game. Trends have speeded up our game, but the theory is still the same and we still think much of the set-up style of play.

Last year we used a fast break mixed with set-ups with good results. We did considerable amount of work on what we think is an ideal fast-break situation, three offensive men on two defensive men. By doing this over and over we convinced the boys that this is the only situation on which we wish a fast break to work. If the defense has our offense even or outnumbered, then it is time to go back to set-ups and use them in giving us screens to aid us in getting into position for a good shot. Our next job is to teach these boys to get the ball from a rebound, to start it down the floor fast and get over the mid-line before a defense can form. If the ball is over the mid-line, then the boys' judgment must be developed so that they know when to go through, if they have the defense outnumbered, or to set up, if they do not outnumber the defense. Never do we want more than three players in a fast break; and we want the other two men to trail and be ready for defense in case of a stolen ball or an interception.

In regard to set-ups, we probably go into this a bit more completely than do many teams. Before the season begins, we try to get a program of set-ups that will give us some variety for every type of defense that we expect to meet. After we have gone over our scout reports these are fitted to a game, and we try to choose the ones that should go the best against the particular style of defense that we are about to meet. If our suggestions do not work out, our floor captain has the right to change the set-up at any time it seems advisable. By the end of the season we usually have ten or twelve set-ups, but we hardly ever use more than two or three in any one game. This gives us an ever-changing offense and that is very valuable to us in our league as the scouting is very intensive. Our program of offense usually covers set-ups for man-for-man defense, massed defense of either type, and the zone defense.

These set-ups are of two major types, and in the most important we have developed them by loading each individual set-up with options. When any one of these set-ups is broken down, as many as four major options may be found, with each major option containing many minor options. These options in each set-up are arranged so that there is continuity of action and a variance of result and we try to train the reactions of our players to fit the position of the defense as the set-up develops. If any one option is stopped by the defense we try to shift to one that is open and unguarded. These options are taught as individual plays and then grouped together with the reaction from one to the other as the ball advances.

The second and more minor type of set-up that we use is the old spot play that has few or no options connected with it. These are used only at times when we feel the defense that we are meeting is set for it; and it is not repeated often. We find, however, that a play of this kind thrown in at the right time will keep the defense in line and will help open up our major set-ups.

To play this kind of basketball, a squad must have a sound knowledge of basketball fundamentals. Passing, pivoting, feinting, shooting, dribbling, etc., criss-crossing or any other close handling of the ball are stressed throughout the season. We are

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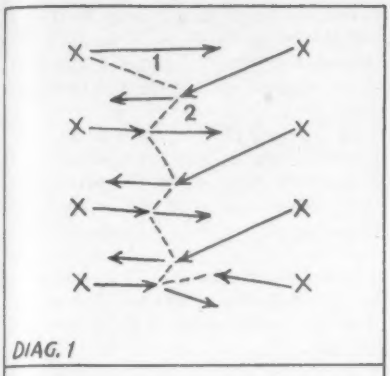
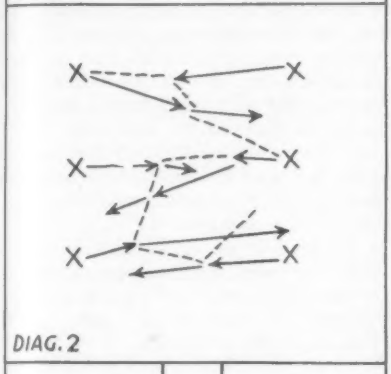
*THE University of Wisconsin basketball team coached by H. E. Foster won the National Collegiate Basketball championship of 1941. As a player at Wisconsin, under Dr. Walter E. Meanwell, Mr. Foster was given an all-conference berth in 1929 and 1930, and all-American honors in 1930. In 1933-34 he was assistant to Dr. Meanwell and in 1935 became head coach. His team that year tied for the conference championship.*

*IN the National Collegiate Basketball play-offs, the University of Wyoming was selected to represent the Rocky Mountain Region. Before going to the University of Wyoming as basketball coach in 1939, Mr. Shelton, a graduate of Phillips University, coached at Claremore, Oklahoma, High School, Phillips University and Christian Brothers High School, St. Joseph, Missouri.*

*IT is not necessary to introduce Dr. H. C. Carlson of the University of Pittsburgh to the readers of this publication. He has contributed through the years such excellent articles as The Tonic and Phasic Actions of the Muscles in Basket Shooting, and The Evolution of Offensive Maneuvers. Dr. Carlson's Pittsburgh team was selected to represent the Middle Atlantic Section in the 1941 National Collegiate play-offs.*



DIAG. 1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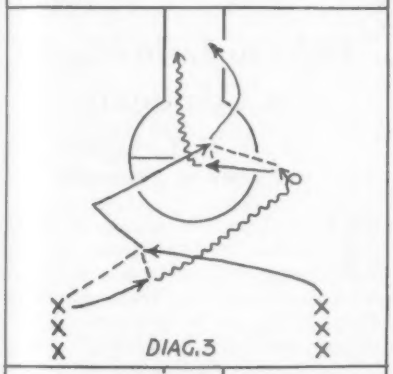
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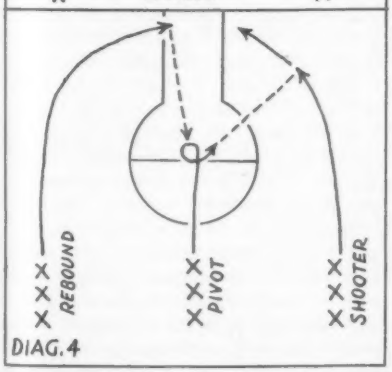
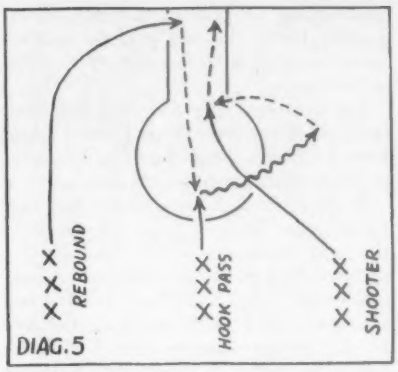


DIAG. 4

always moving our men in advancing the ball and we expect them to gain toward the basket at all times. We feel that a sound knowledge of the above fundamentals will give players a means of protecting the ball and playing a set-up style of play.

Many coaches today are having good seasons without set offenses of any kind,



DIAG. 5

### *Drills for Fundamentals*

1. Single Pass.
2. Double Pass.
3. Double Criss Cross.
4. Three Line Pivot Drill.
5. Three Line Hook Pass Drill.
6. Three Line Pivot or turn pass Drill.
7. Center Pivot Drill
8. Dribble pivot, cut drill.
9. Dribble, hook pass and cut drill.

but at Wisconsin we still feel we have an advantage in this type of offense. First, every member of the team knows exactly what is supposed to happen, where his team mates are, and when a shot will be taken. Second, our players are balanced on the court and we set up our defense, rebound men, etc., as the play advances. Third, we get shots closer to the board and expect to make a better percentage in close than if we shot long. Fourth, a moving offense that tries to go through a defense is fouled more and we profit by free throws. Fifth, a balanced set-up will provide scoring for all members of the squad; an offense with points divided throughout the entire squad, is more difficult to stop. Sixth, we control the ball more, thereby cutting down the opposing team's chances to score. Seventh, our men find rest periods during certain plays so that we never become exhausted.

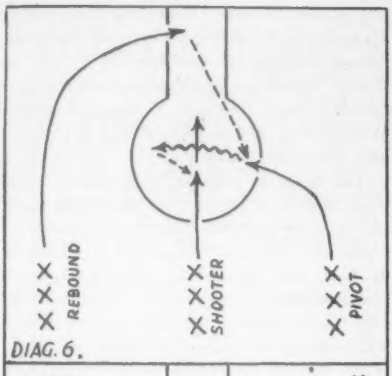
We use the accompanying drills for developing fundamentals.

## The Single Post and the Five-Man Weave at the University of Wyoming

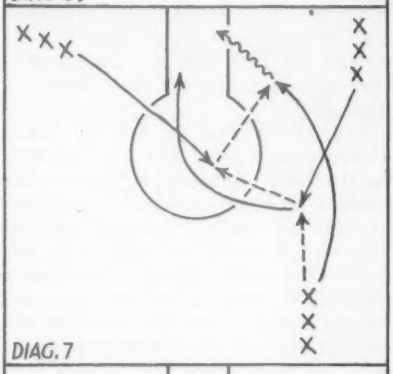
*By Everett Shelton*

**Basketball Coach**
**University of Wyoming**

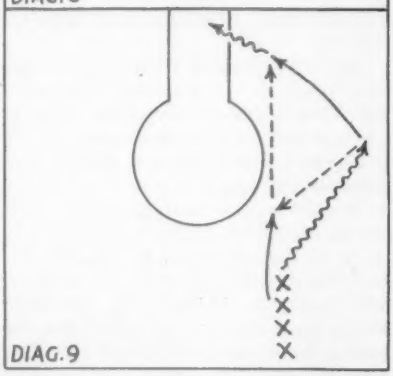
BASKETBALL fever in the Rocky Mountain section may well be compared with that of fans in the so-called "Hotbed of Basketball," Indiana. For here, in the shadow of these mountains, are people as rabid and enthusiastic as those found anywhere. Because of this enthusiasm, the coaches of this region must offer to the public fine teams which use the most modern developments of the



DIAG. 6.


DIAG. 7

DIAG. 8


DIAG. 9

game.

Colorado University has proved this by playing in Madison Square Garden for six years, during the holiday season. This year Wyoming joins them in showing the East what the West can do.

In the Rocky Mountain section we have two conferences: The Big Seven, or Mountain States, consisting of Denver Univer-

sity, Colorado State, Wyoming University, Utah State, Utah University and Brigham Young University; and the Little Five, or Rocky Mountain Conference, consisting of Greeley State Teachers, Colorado College, Western State, Colorado School of Mines, and Montana State.

The style of offense used differs with each school, although the set-screen style of play is gaining prominence rapidly. Colorado University, coached by Forrest B. Cox, and winner of three conference championships, uses a set-screen, ball-control style of play, with a fast break when the opportunity presents itself. They use a double post close to the free-throw lane, moving the other three men in around the post men and screening as they cut. Their two post men screen for each other.

Utah University, coached by Vadal Peterson, has finished up in the first three for the last five years and is always a contender for the championship. Utah's team at times has used a pressing defense and a fast-break offense, but now use a set-screen, ball-control offense. They use a single post, screening to free their one-handed shooters, for the teams on the western side of our conferences always have several excellent boys of this type on each team.

Utah State has a new coach in H. B. Lee from Stanford and Brigham Young University a new coach in Floyd Millet, who formerly had been assisting Eddie Kimball, so we do not know what they will use.

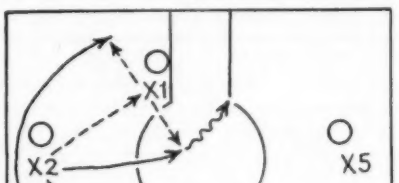
Denver University, coached by Ellison Ketchum, uses a single post and three in and two out, the three men under the basket screening for each other. They also use a fast break. The other school in the conference, Colorado State, coached by John Davis, finished last season with a very deliberate set-screen, ball-control offense.

Here at Wyoming University we will try to defend the conference championship we won last year by using three set offenses, two off of a single post and the other one, a five-man weave, starting with three out and two in. I adjust our offense to suit the boys we have each year. During my experience coaching seven years in A. A. U. basketball and winning the National championship in 1937 with the Safeway Stores, Inc., of Denver, I have found that a coach has to spend much time adjusting his offense to fit his material. This year we are much larger than formerly and we will use more offense off of the post.

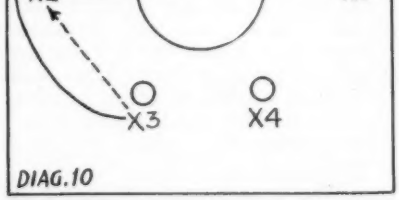
Our set offense is set up in such a way as to allow boys to shoot from their favorite spots with at least three variations off of each screen play. Thus the boy is not made part of a machine but he is set up so that he may better use his individual ability. I do not believe that the public likes to see a great deal of passing and maneuvering for position to finally set up a play. Every time we pass the ball we move to set up a screen and try to drive in for a score.

The accompanying diagrams will illustrate an offense we will use off of a single post. I have used this offense for a number of years, changing it a little each year.

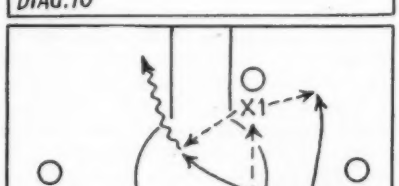
In Diagram 10, X 1 maneuvers back and forth across the free-throw lane to be in the right position to receive the ball. X 3 passes to X 2 and follows the pass around outside of X 2; X 2 passes to X 1 and stands to screen the defensive man of X 3. If the defense changes men, X 2 drives around in front of X 1 before the defensive man of X 3 can get back to take him. X 1 has the option of passing to X 3 or X 2, depending on which is open. The defensive man of X 1 shifts to take either X 2 or X 3 after the pass is made. X 1 should turn expecting a return pass. A good fake pass by X 1 to the man coming in will often loosen up his defensive man so that he will have a good shot off of the post. The defensive men of X 3 and X 4 play loose, so we use our best long shots in these positions.



DIAG. 10



DIAG. 11



DIAG. 12

In Diagram 11, X 4 passes direct to X 1 and, following the pass, drives hard to the basket just inside of the defensive man of X 5. When X 4 is on the inside of the defensive man of X 5, X 5 cuts around in front of X 1 for a pass and a lay-up shot. If the defensive man of X 4 changes off to take X 5 coming around, X 4 is open, driving in on the inside of the man defending X 5.

Instead of coming back and setting up our offensive formation, whether it is an intercepted pass, or a ball off of our own backboard, anytime we have three men in some sort of triangle we use the play shown in Diagram 12. X 3 passes to X 1 and drives toward the ball and basket, when X 3 is on the inside of the defensive man of X 2. X 2 drives around toward the basket for a pass from X 1.

All the drills we use are part of our offense, with each boy driving and working on the shots he will use in games. We try to have our drills resemble game conditions as closely as possible.

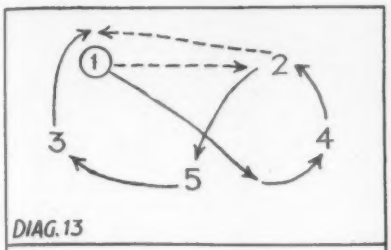
## Eight to Eighty-Eight In Continuity

*By Dr. H. C. Carlson*
**University of Pittsburgh**

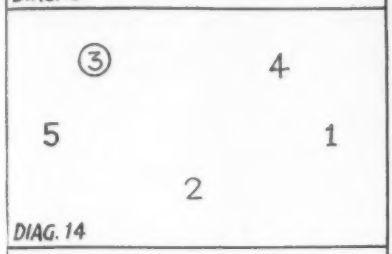
THE 1940-1941 system of offense utilized by the University of Pittsburgh basketball team was based on their characteristic continuity in the Figure 8. The two types of continuity employed were with the dribble and without it. Practice in ball-handling and other fundamentals was facilitated by the use of these continuities, regardless of their efficacy as offensive systems. Scoring plays sparked off the continuous action. If one play, or its series, was not applicable, a second or third series became available. The dribble and non-dribble continuities are interchangeable without signal and each sets up its series of plays.

The no-dribble continuity is well known and presents the large Figure 8. The dribble continuity has not been described so often and presents a continuity with smaller areas of travel in a Figure 88. The possibilities become available, therefore (and not facetiously), to all basketball teams or physical education classes in the age-group of eight to eighty-eight.

The teaching of the continuity comes first. The teaching of the scoring plays comes later. The two continuities here may be changed into one inclusive continuity. Each is very simple in itself, but it must be repeated that scoring plays are



DIAG. 13



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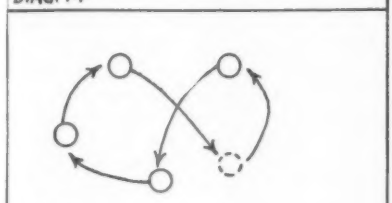
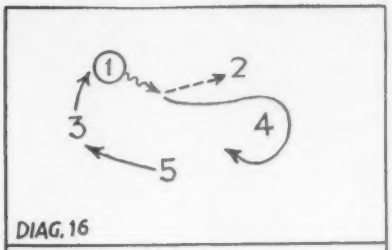
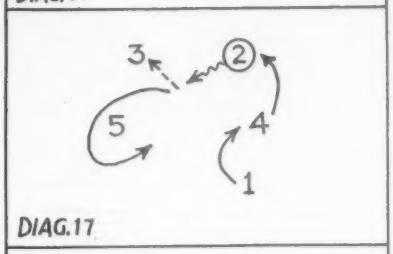
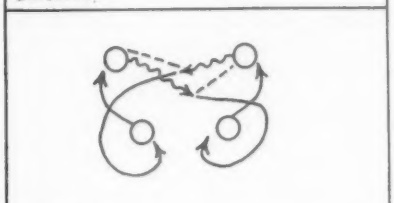

DIAG. 15

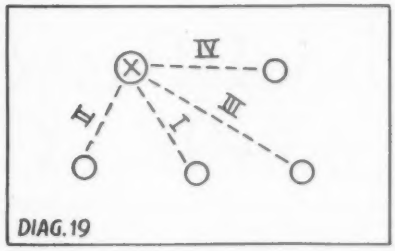


DIAG. 16

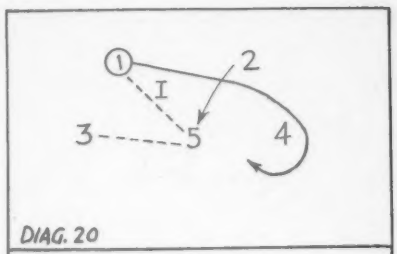


DIAG. 17

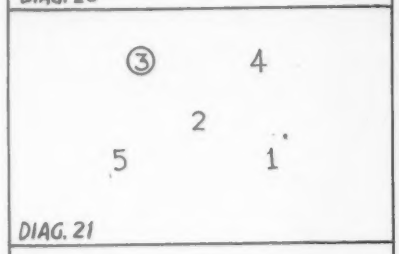

DIAG. 18



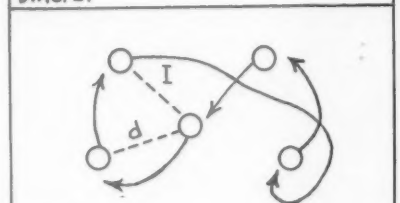
DIAG. 19



DIAG. 20



DIAG. 21



DIAG. 22

an advanced development.

The no-dribble continuity with five men involves a pass and a cut toward the basket. Two team mates are on the same side of the court as the passer. Two team mates are on the opposite side of the court, as possible receivers. This gives spread, one of the requisites of a good offensive. The passes here are cross backcourt and, as the tempo increases, should reach seventy per minute with the entire team participating. The scoring plays will be developed later, but training, conditioning and emotional drive may be developed to a great degree with the drills illustrated in the accompanying diagrams.

In Diagram 13, 1 passes to 2 and cuts for the basket, 3 replaces 1, and 5 replaces 3. Two passes to 3 and cuts for the basket, as 4 replaces 2 and is in turn replaced by 1.

In Diagram 14, we picture the men after two cross-court passes. The circled number represents the position of the ball. A little pencil and paper practice will show that five cross-court passes will place the players in the same relative positions on the opposite side of the court.

Diagram 15 gives an approximation of the lines traveled in the continuity when only cross-court passes are used, without dribbles.

The dribble continuity will present a Figure 88. A dribble will carry the dribbler farther cross court and presents a cut, relatively, from the outside in toward the basket. Diagrams 16, 17 and 18 illustrate the mechanics of the no-dribble continuity.

In Diagram 16, 1 dribbles cross floor and passes to 2. One continues his cut around 4 on the way to the basket. As in the preceding series of diagrams, 3 replaces 1, as 5 replaces 3.

In Diagram 17, 2 dribbles cross court, passes to 3, and cuts around 5. Four replaces 2. Due to the angle of 1's preceding cut, he comes up into a possible pivot post. This gives some indication of a subsequent scoring possibility.

Diagram 18 shows the lines of travel by the dribbler in his course cross court, toward the basket, and then on his journey of replacement.

The plays are too great in number to describe in detail, but the scoring habits come as easily as the continuity habits. The plays come in each of several series, as numbered in Diagram 19 of the no-dribble continuity. X has the ball and a return pass to the cutter would set up a possible series of plays shown as I. A pass to the side court would set up a series of plays under II. A pass diagonally cross court would set up a series of play shown as III, which would be somewhat similar to series II. The pass court shown as IV carries on the practiced continuity but a series of plays is also possible. The possibilities of plays recur over and over at the pleasure and discretion of the player with the ball. Some of the possibilities of series I are shown in diagrams 20, 21 and 22.

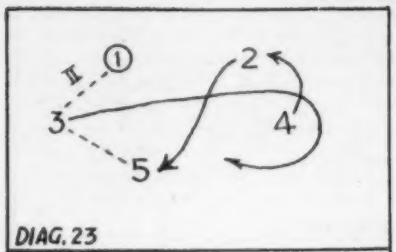
In Diagram 20, 1 passes to 5 the cutter for the start of series I. One continues cross court in front of 2 and around 4 on the way to the basket. A number of possibilities of plays develop under I, as well as a new continuity as shown by the new positions in Diagram 21.

In Series I, 5, getting a return pass from 1, has a number of possibilities: (a) 5 could dribble in and shoot; (b) 5 could pass to 2 coming in as a trailer; (c) 5 could pass to 1 under the basket after running around 4 as a screen; (d) 5 passes off to 3, goes to the side and sets up the regular formation for 3 to look at a new I, II, III, and IV. Since the plays are run on both sides the possibilities are multiplied by two.

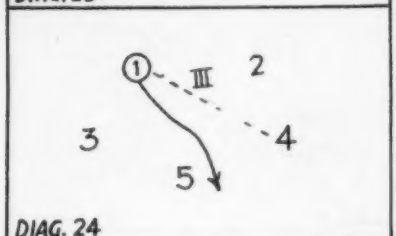
Diagram 22 shows the lines of travel with the continuity developing off series I d.

Series II presents the back man passing to the front man on the same side. This series has as the first chance a pass from 3 to 5 cutting under the basket. This gives a three count or three-pass play for a score from 5 to 1 to 3 to 5. Five comes into the same sequence of plays as he had in Series I. Three may retain the ball for a shot without a dribble, or dribble into the basket, or make a pass to 1, 2, or 4 in their original positions.

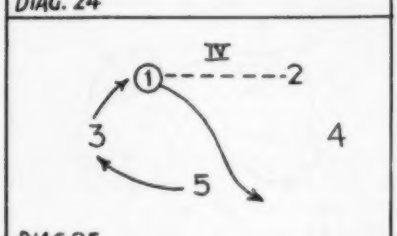
In Diagram 24, we see the start of Series



DIAG. 23



DIAG. 24



DIAG. 25

III with a close resemblance to the possibilities of Series II. In Diagram 25, Series IV is shown, which may be only a continuation of the original no-dribble five-man Figure 8 continuity.

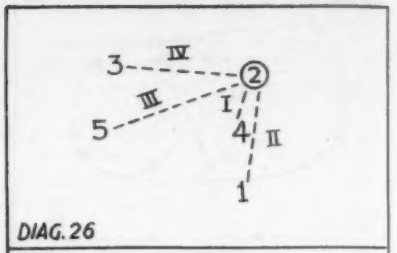
### *The Dribble Continuity Plays*

In the five-man dribble continuity we note the possibilities of plays set up after a player has dribbled cross the floor to a team mate. Series I, II, III, IV have similar and yet different possibilities. One has dribbled cross floor, given the ball to 2 and continued around 4 to the basket, setting up the positions and possibilities of I, II, III, and IV shown in Diagrams 26, 27 and 28.

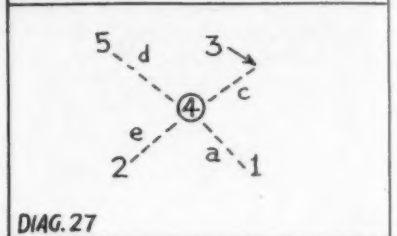
Two may pass 1, cross in front of 3, and proceed around 5 to the basket. This will set up a Series I similar to the Series I of the no-dribble continuity.

In this latter I, (a) 4 may pass to 1 under the basket; (b) 4 may pass to 2 under the opposite side of the basket; (c) 4 may pass to 3 cutting over the pivot; (d) 4 may pass to 5 for a new continuity. These possibilities are shown in Diagram 27.

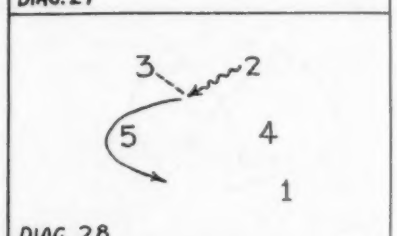
*(Continued on page 26)*



DIAG. 26



DIAG. 27



DIAG. 28

# High School Basketball of Championship Caliber

## The Mastery of Fundamentals

*By Herman Littman*
Formerly Coach
Roosevelt High School, Washington, D. C.

*UNDER the heading High School Basketball of Championship Caliber, high school coaches whose teams won the 1941 state tournaments will tell their stories, emphasizing the technique employed. In this issue appear the articles of Herman Littman, formerly of Roosevelt High School, Washington, D. C. and Edward D. Hall of Two Rivers, Wisconsin. Other champions will have articles in succeeding issues.*

*During his six years of coaching at Roosevelt High School in the District of Columbia, Mr. Littman's teams won two city championships and finished second three times. His 1941 team also won the Duke Tournament last March. He played baseball and basketball at Washington and Lee University and at the School of Physical Education, New York University. He is now a lieutenant in the army, serving as instructor at the Quartermaster School, Schuylkill, Philadelphia.*

*A graduate of Oshkosh Teachers College, Mr. Hall has had a remarkably successful coaching career with forty-one conference basketball championships to his credit. Before going to Two Rivers in 1932, he coached at Fond du Lac Junior High School and Ocouto High School and was one year assistant coach at Teachers College.*

THE athletic rules of the District of Columbia high schools restrict the start of basketball practice to the first of December. For a period of two weeks, practice is limited to calisthenics, instruction and drill in the fundamentals of passing, shootng, dribbling, quick stops, starts and turns, feints, and one against two or two against three scrimmages. Practice games are held during the third week.

Basically, the system used at Roosevelt was built upon the mastery of fundamentals. The teaching of set plays was omitted entirely. Plays originated spontaneously from situations as they developed on the floor. Our particular system, or type of play, has been adapted to the ability of the group of boys on the squad.

### *Conditioning*

The success of a team is measured by its physical condition. Daily calisthenics throughout the season, plenty of running, constant emphasis on proper diet, sufficient sleep, the care of the legs and feet all make for a well-conditioned squad.

### *Fundamentals*

Shooting practice for the free throw is provided for daily. Each player is required to shoot from fifty to one hundred free throws each day. Boys are permitted to use their own style of shooting so long as they are successful.

The Roosevelt High School squad has been very successful with the long, set shot. Players are encouraged to shoot any time they can get set, within a reasonable distance from the basket. A team is handicapped if its members do not shoot when they have worked themselves free. Any shot that is taken must be made from a set position. The players must be well balanced, weight forward, feet spread, back straight and the forearms parallel to the floor. The eyes are glued to the part of the rim nearest to the shooter from the moment the player gets set to the moment the ball goes through the hoop. The coach should watch for any tendency on the part of the player to follow the flight of the ball with his eyes and correct this fault. The shot is completed with a full follow-through of the arms directly at the point of aim. Players are taught to leap from the floor on every shot. A reverse spin is employed on set shots. All set shots are

aimed to go through the hoop without the aid of the backboard with the exception of those taken from certain areas (See Diagram 1). The shaded areas are the positions on the floor where banked shots are desirable.

On the short, under-the-basket shot, much practice is spent on the following: 1. The release of the ball from the finger tips of the outstretched arm at the height of the jump for the basket. 2. Proper position or balance with the body relaxed, the back straight and the head up. 3. Putting the ball up against the backboard as light as a feather, with little or no english. 4. In driving in under the backboard, the player must learn to come to as much of a stop as possible, preliminary to the jump and shot.

In ball-handling, many drills are used to develop skill in passing and catching the ball. Accuracy rather than speed is stressed in passing. In catching the ball, the player must keep his eye on the ball until it is safe in his hands. Then extra pressure is exerted by the hands to prevent fumbling.

Dribbling drills teach the low dribble when there is danger and the high dribble when speed is desired in the open. Players practice the dribble with either hand, keeping their bodies between the opponent and the ball. At the same time they glance away from the ball to take in their surroundings.

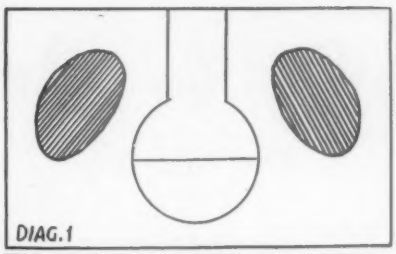
### *The Roosevelt High Offensive*

Working on the premise that a fast-breaking offensive will beat the defense down court, thereby setting up a two-against-three or a one-against-two situation, the Roosevelt squad employed the fast snappy pass type of offensive with a minimum of dribbling. Should the defense develop fast, the Roosevelt players used a double triangle system which involves give-and-go technique (See Diagram 2).

The dark line indicates the path taken by players who pass the ball to a team mate and then cut for the basket. Should the player break free, as he goes in, he receives a return pass. If not, he continues to the corner, comes out, and, stopping at the x mark, sets up a post around which a team mate may cut, thereby freeing himself of his opponent.

To vary the offensive, a pivot man is occasionally set up at the free-throw line. He comes forward to meet passes, team mates cut by and receive a short pass if they are clear, otherwise the pivot man will fake a pass, turn quickly and shoot.

To meet a zone defense the Roosevelt team employed two types of offense (See Diagrams 3 and 4). Diagram 3 shows an offense against a 2-3 zone defense. Players 2 and 3 bring the ball down the court and pass it between them until 3 passes in to 4. At the moment 4 receives the ball, 1 drives across into the free-throw lane and, if clear, receives a pass from 4. One either goes in for a shot or bounce-passes to 5 who has crossed under the basket to the opposite side. The play may be worked on the other side with 2 passing in to 1 and 4 coming across the lane.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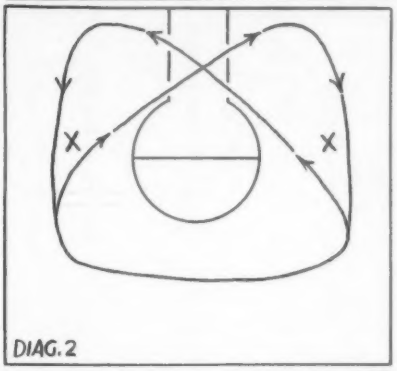

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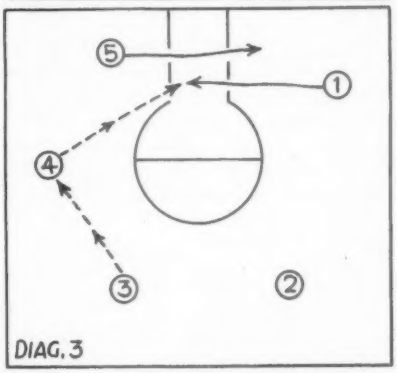
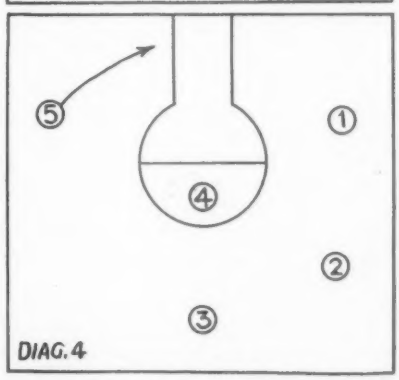


DIAG. 3



DIAG. 4

Diagram 4 shows the offensive used against the 2-1-2 zone defense. Players 1, 2, 3 and 4 pass the ball among themselves. Four looks over his shoulder each time he gets the ball. If he is clear, he turns quickly for a shot. All players watch 5, who either receives a long quick pass or maneuvers himself to a position under the basket for quick pass and shot.

Against the zone defense the Roosevelt players make much use of the feint before passing, and of the bounce pass. The boys get set quickly at every opportunity for a long shot.

### *The Defense*

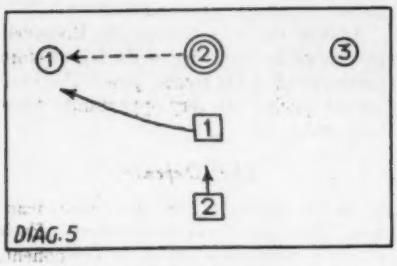
On the defensive, the Roosevelt team used the man-for-man defense. Each player is responsible for his own opponent. Aggressiveness is the keynote, particularly when a player's opponent has the ball. At this time the player must close up on his man, forcing a play. When the opponent gets rid of the ball, the defensive player falls back a bit. Players must keep the following things in mind while on the defensive:

1. Footwork must be that of a boxer—no crossing over of feet.
2. Hands must be up, especially when the opponent has the ball.
3. As an opponent cuts for the basket, the defensive man must keep up with his opponent or slightly ahead of him.
4. A player should never allow his opponent to get between him and the basket.

This briefly covers the style of offense and defense and the training methods used in bringing the Roosevelt High School squad of the nation's Capital to a city championship and in winning the Duke-Durham Southern High School Tournament last March, by defeating Boys Latin of Atlanta, Lafayette of Lexington, Kentucky and Senior High of Greenville, South Carolina.

Of much interest in the District of Columbia tournament was the great degree of variation in the style of play and methods used by the several teams. Tech employed a deliberate, methodical type of offensive, which enabled their set plays to function most effectively. Their defensive was most unorthodox, changing from the zone to the man-for-man, and causing the opposition much trouble. Eastern used a horse-shoe type of offense, alternating with a figure-eight weave. Posts were created around which players cut for the basket. On the defense the Eastern players were most effective with the use of a shifting man-for-man.

For basketball to remain the truly great game that it is, it must teach unselfishness, fair play, desire to abide by the rules, and co-operation. Above all else, the game must teach boys to lose gracefully and to win graciously. Winning basketball depends, as Coach Wallace Wade aptly expressed it, upon a great degree of good fortune. This is unquestionably true. Other factors, however, are possibly more important. Team philosophy, player psychology, physical conditioning, training in fundamentals, offensive and defensive game tactics, these and many other elements of the game must be worked on from the opening day of the season to the very last.



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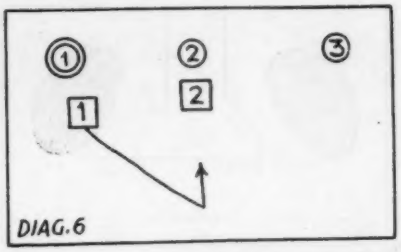

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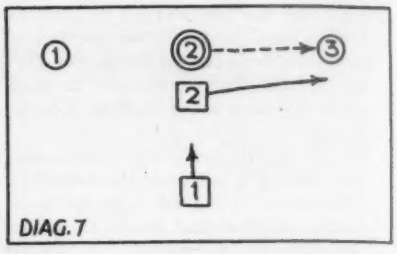


DIAG. 7

# An Offensive Defense

*By Edward D. Hall*
**High School, Two Rivers, Wisconsin**

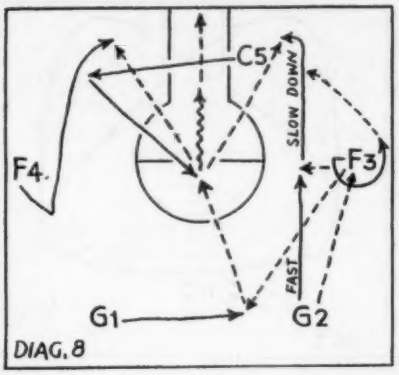
THE theory that a good offense is the best defense is a generally accepted one. However, I feel that, in basketball, a good defense can materially aid the offense and that no great distinction should be made between the two. In order to have well co-ordinated team play, the offense and defense must fuse together.

The Washington High School team of Two Rivers, which won the 1941 Wisconsin state tournament, played a full-court defense, putting the pressure on in the back court, where it is reasonably safe to take chances. As a result, the frequency of intercepted passes was high and the distance to go for a basket was short. For the reasons mentioned, I feel that, as the rules are now, this type of defense is more suitable for quick breaks than is the zone.

Our plan of defense was the man-for-man principle, in which each defensive man adjusts his position in relation to an imaginary line formed by the ball and the basket. He must always keep himself between his man, the imaginary line and the basket. With each pass a new line is set up, thus necessitating a shift of positions of all five men.

I like to have my boys play close to their opponent in the back court where the pressure is on, and loosen up gradually as we are backed down the court. This loosening-up increases the difficulty of screening by the offense. We trade men in the defensive half of the court by following passes made to the side but not back to the middle. These passes are taken care of by the man on the side, who, after the trade, has dropped back and to the middle and then advances forward. He, in turn, follows the ball to the outside. In this type of maneuver, two men can quite successfully cover three offensive men, thus turning the balance of power in favor of the defense by a theoretical proportion of five to seven and one-half.

Drills on these defensive tactics are routine practice with my teams and I find shifts of this type work equally well against screening offenses and offenses which are designed to combat a zone.



DIAG. 8

Diagrams 5, 6, and 7 explain this shift. This particular shift is probably used more frequently than any other to cover a three-on-two situation resulting from a quick break. I like to have my defensive men in tandem, midway between the sidelines, to meet this offensive charge. As the three offensive men approach shooting range, the front man challenges the middle man and forces him to pass. He then follows the pass—if it is to the side. The second man in the tandem keeps his position, prepared to intercept a return pass or to cover either of the other two men if they cut for the basket.

On offense, we stressed the quick break, using the direct three-lane principle. We like to get the ball in to the center lane as quickly as possible and advance it by a fast dribble. Upon approaching the basket, the dribbler must size up the situation and decide in a fraction of a second whether he is to take a shot or use either of two plans: (1) Momentarily hold the ball and fake a shot to draw the guard out, then pass in to a team mate under the basket; or (2) Pass in quickly to a team mate who fakes a shot and makes a return pass to the man in the center lane for a shot.

For occasions when the defense has had time to retreat and get set, we used several different set-ups, depending upon the style of defense. As most teams in last year's tournament played a loose man-to-man with a check plan or zone principle, screens could be set up occasionally, but we found we were more successful by spreading the defense first. This could be accomplished because all of the boys were good set shots and our right guard was an exceptional medium-range shot. We shot quite freely over the defensive players, when they refused to come out. When the defense was sufficiently spread, our offensive captain flashed a signal for a quick-scoring play.

Our team had three plays starting from each guard, making a total of six, all of which operated in a continuous series, allowing several options during the progression of the play. Diagram 8 illustrates the principle of one play and its continuous series.

*Option 1.* G 2 passes to F 3 and cuts inside. F 3 gives the ball to G 2. G 2 attempts to score or, if covered, pivots and passes to C 5 who has crossed over the lanes and come out. C 5 turns and faces the basket. He may now pass back to G 2 to the right of the basket or to F 4 who has faked to come out and is now driving in on the left. C 5 may shoot and follow or fake a shot and dribble in for a lay-up. F 3 fakes a cut to the basket and swings out to the edge of the circle as tip-out man. G 1 has moved over to take the place of G 2.

*Option 2.* This movement differs from Option 1, in that after G 2 passes to F 3, F 3 fakes a return pass on the inside and, as G 2 goes past F 3, he slows up and looks over his right shoulder to receive a pass from F 3 who has made a front turn to his left. From this point the play may progress as in Option 1.

*Option 3.* F 3 takes a pass to G 2 and passes out to G 1 who has come over to take the place of G 2. G 2 passes to C 5 who has crossed the lane and has come out. C 5 now has the same options as before. In case G 1 cannot pass in to C 5, he will pass to F 3 and drive in the same as G 2. In this case F 4 comes out to take the place of G 1 and moves over to the position of G 2. G 2 goes across the lanes and out to replace F 4. C 5 goes back to his original position and the series starts over. This same play is worked to the left from the same signal with the guard making the pass in, determining whether it is to be right or left.

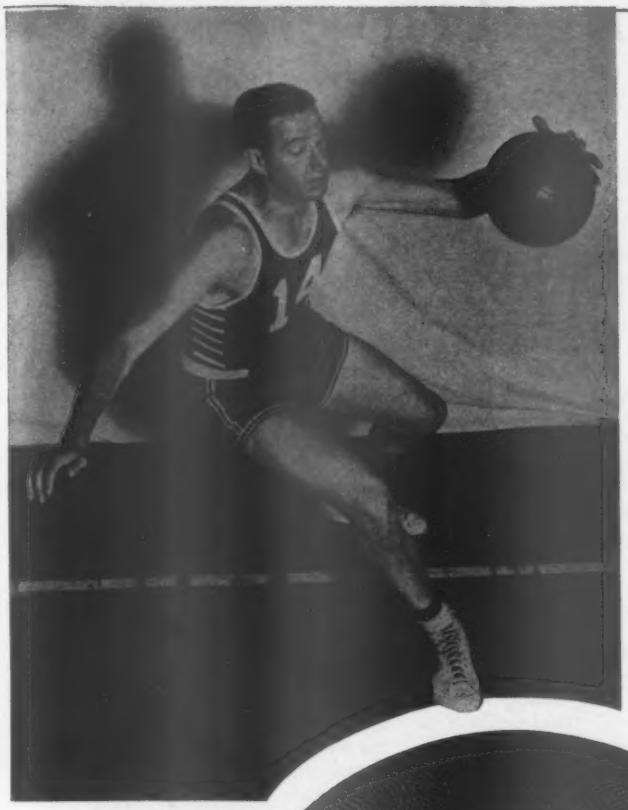
We use set plays from out of bounds and tip-off plays on jump balls in the offensive half of the court.

The Two Rivers team last year averaged five feet ten inches in height and were unbeaten in twenty-one consecutive games.

Shawano, the runner-up team last year, was champion in 1940. Coached by Clifford Dilts, they used a man-to-man defense, covering approximately one-third of the court. Their offense was not based upon

*(Continued on page 26)*

# Grab Hold of This One!



*High speed photo of Nat Holman, coach of C. C. N. Y. Taken at Spalding Research Laboratories. © A. G. Spalding & Bros.*

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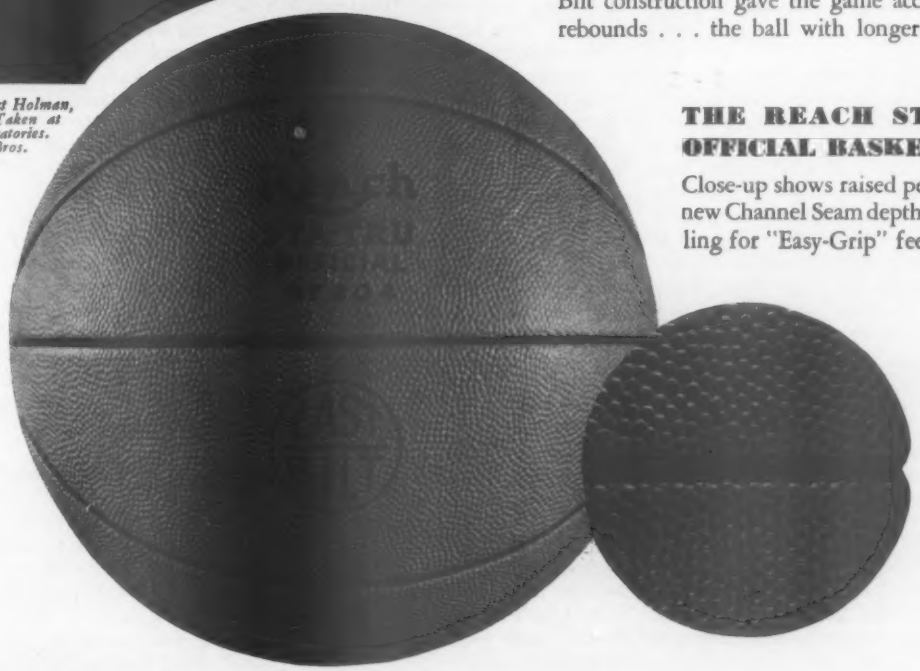

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# Preparation for a Spring Baseball Training Trip

*By H. S. DeGroat*
**Baseball Coach, Springfield College**

SOME college baseball teams make spring training trips during their Easter vacations. Some New England teams travel to Maryland, Virginia and North Carolina while some of the North Carolina teams travel to South Carolina or Florida and so it goes. These trips are valuable to a young college baseball player. The greatest contribution of such a trip is that it makes each player baseball-conscious. College athletes who play different sports each season of the year cannot jump into such a highly technical game as baseball and be baseball-conscious at the very start. They must have played several games, before they get into the swing of it again after competing in other sports. Playing experience is one of the biggest factors in making a real baseball player. If a boy plays ball only during the short college season and has no summer practice, it takes a long, long time for him to accumulate the experience to make him the player that the coach would like him to be.

Undoubtedly, the early training of teams in the Northern states is entirely different from the methods used in the Southern states. There is no doubt that the baseball coaches of teams in North Carolina have access to a greater number of more experienced players than coaches of New England teams. I limit my statement to these sections because my experience covers the states named. To my mind, North Carolina is one of the finest baseball sections in the country. My impression, gained by annual visits since 1927, is that it has become increasingly better year by year. We have had the experience of playing from four to six games in a week and winning from none in one year to all in another. Winning in recent seasons has been more and more difficult. The factors involved are as follows. The Southern team generally has had several weeks of outdoor practice. The Northern team usually catches its first fly ball while en route to the South and often runs short of good pitching before the series is played out.

The method of preparation which we use when we are getting ready to make a training trip may be of interest to other coaches. The only standard that we can set as a basis for our method is the fact that we usually equal or out-hit the teams that we meet in these early games. Errors, poor base running, and loss of control by the pitcher often throw away the game. Usually it is better to play one team a series of games than to play a different team each day because, in the latter case, the best pitchers of each club are pitched against the visiting team's staff of pitchers which has begun to tire as the days go by. Experience also seems to favor traveling directly after each game to the next college. This eliminates the strain of travel before the next game is played and also allows for a morning work-out if advisable. Fatigue makes it inadvisable to work out some mornings, especially late in the week.

### *The First Practice*

By regulation we cannot start practice until February fifteenth. So, we have our first work-out that day. Battery men are given first preference. Good facilities or lack of them has an important bearing upon what can be done. Time allowance is another very important element that faces the coach. If we had an indoor cage undoubtedly our method would be quite different. We have no cage; we have one gymnasium, 100 x 48 to be used on some days and a smaller gymnasium to be used on the remaining days of the week. Some of the players can come for an hour nearly every day, while some can come only two or three times each week. We may be able to schedule the gymnasium for one hour some days or perhaps two periods which can be attended by two different groups. A Saturday morning two-hour session usually catches a majority of the squad so that work can be different then from that of other days.

Such things as body conditioning with setting-up exercises, medicine ball tossing and running must be eliminated. The time limit and space allow only the conditioning of the arms, the work on pitcher's control, batting form and bunting with perhaps something different in the Saturday session. I know some coaches who are firm believers in various types of work to develop the batters. One or two have their men hitting a baseball which can be hung at various levels; the ball has an eye-bolt run through it. One coach has his players use a very heavy bat and wallop an old medicine ball which is on top of a low table, a gymnasium horse or buck. This gives wrist strength and conditions the arms.

### *Our Method*

This is what we do. We start the battery men off gradually; we have them throw the ball easily at a short distance and gradually move back until near the regulation distance. At first the emphasis is placed on getting their arms in shape. If the infielders and outfielders come in at the start of the period we have them toss the ball across the gymnasium while the battery men throw the long way of the building. The infielders and outfielders roll grounders to each other as a variation. This work is mainly to condition their arms and hands.

As the battery men progress, the speed of their throwing is increased. The warning to take it slowly and not hurry the arm is always given. Twenty minutes during the first ten days is about enough, although it may take thirty minutes, if two pitchers are working with one catcher and longer, if three are working.

After ten days the pitchers should begin to work for speed and for control. The catcher should be calling for the corners by placing his glove. I like to see him hold the spot for two or three pitches rather than call for a different spot on each pitch. As the battery men take a longer part of the hour session, the infielders and outfielders are encouraged to stand up at the various plates while the battery men are working. Looking over pitched balls is good for batters. Battery men who have finished their work-outs are also encouraged to look them over.

### *Bunting and Swinging*

The last part of the period is devoted to bunting and ball tapping. The players are organized into groups of threes, fours or fives according to the number on hand. One takes a bat and a cardboard base and stands on one side of the gymnasium. The other members of his squad take positions across from him. Five batters or at the most six can be spaced with safety in our larger gymnasium. They are really playing a "pepper game."

In tapping the ball (we must tap the ball because we have no netting and therefore

*(Continued on page 22)*

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# The Question of the Modified Bankboard

*By A. E. Willett*
**Athletic Director, Hebron, Illinois, Community High School**

MODIFIED basketball backboards were used in many high school and college gymnasiums throughout the country last season. This season will disclose a decided increase in their number. The trend toward the streamlined board is recognized by the National Federation of High School Athletic Associations. This body has ruled the modified board official equipment for the 1941-1942 season.

In spite of this wide-spread acceptance there are still those who object strenuously to the new-style board. To those who are interested in the controversy, most of the arguments of both sides are well known. In an attempt to bring some statistical evidence into the picture, the writer set out to answer this question: How much of the area of the conventional backboard can be removed without altering seriously the existing scoring or goal-shooting situation in basketball?

The plan of the investigation was to observe actual games and to record the primary destination of each attempted try for field goal. During the 1939-1940 season, eighty games were surveyed in this fashion. These games included fourteen college games played by De Paul and Loyola Universities against some of the outstanding teams from different parts of the United States. Thirty-nine of the games were played in the Central Amateur Athletic Union Tournaments at White City and at St. Sabina Community Center. Twenty-seven of the games were contested in the National Catholic Interscholastic Tournament at Loyola University.

All attempted shots fell into four classifications: 1. *Backboard Shots.*—Shots which hit any part of the backboard. 2. *Rim Shots.*—Those which hit the rim and rebounded into the court or out of bounds. 3. *Clean Baskets.*—Those which went directly through the basket without contact with the backboard. No discrimination was made against a shot which may have rolled around the rim or hesitated before going in. As long as it made no contact except with the ring or the net, it was included in this class. 4. *Completely Missed Shots.*—Those which missed both backboard and basket entirely.

It should be noted that the "clean baskets" were all successful tries and the "rim shots" and the "completely missed shots" were all unsuccessful.

Data were collected on sheets which bore a diagram of the backboard (Diagram 1). The "backboard shots" were subdivided into five classes according to the area of the conventional backboard which they struck, as indicated on the diagram.

*IN 1934, Mr. Willett was graduated from Wooster College, Wooster, Ohio, where he played center for two years on the varsity basketball team under Coach E. M. Hole. After two years of graduate work in chemistry at Northwestern University and two years of work as a chemist, he came to Hebron at the start of the 1939-1940 season. In two years his basketball teams have had marked success.*

In collecting data, shots were located by placing a mark on the chart to indicate the spot where the shot struck. The investigator, however, also introduced a new feature. A cross classification of shots was devised on the basis of the location on the floor from which they were thrown and the technique of delivery. The reason for introducing this feature was to determine if there were some types of shots which would be affected more than others by modification of the backboard. This, in turn, would answer the question as to whether some teams which base their offense on a certain type of shot would be discriminated against or unduly aided by changing the backboard.

Upon the basis of origin and technique of delivery, all shots were placed in six categories as follows:

1. *Step-in Shot.*—A shot taken at close range with either one or two hands. It is executed with a leap into the air from one foot with an upward extension of the arm or arms.

2. *Two-hand Short Shot.*—A set shot taken from any spot within twenty feet of the basket. This would include an area bounded by an arc of a circle having its center beneath the mid-point horizontally of the backboard and passing through the rear end of the free-throw circle. The arc would intersect the end line which would, of course, complete the boundary of the area.

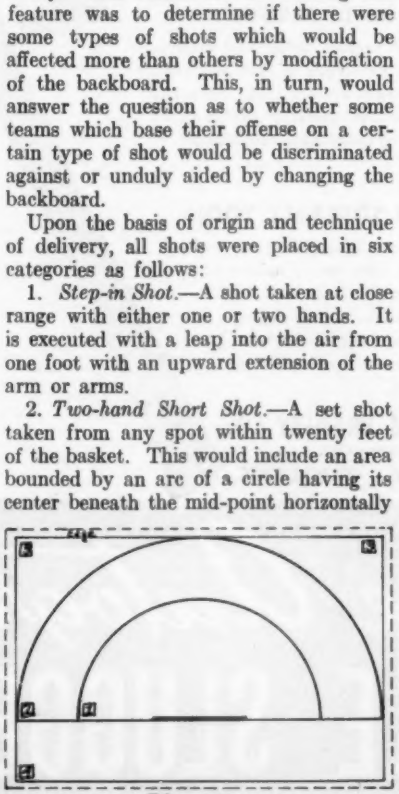

Diagram 1.

3. *Two-hand Long Shot.*—A set shot taken from outside the area outlined above.

4. *One-hand Hook Shot.*—A shot executed with a hurling motion by a player either standing still or in motion.

5. *One-hand Push Shot.*—A shot executed with a pushing or shot-put motion by a player either standing or in motion.

6. *Tap.*—A one or two-handed attempt made by tapping the ball without holding it.

In marking the chart, the number corresponding to the type of shot was placed on the diagram at its proper location. If the shot was successful, a circle was drawn around the number. Two charts were used for each game, one for each team. Accuracy of the data was assured by a four-week period of training in spotting the shots correctly.

Table 1 shows the termination of all shots taken, with no distinction made between successful or unsuccessful attempts.

TABLE 1—TERMINATION OF ALL SHOTS TAKEN

| Termination | Number | Per Cent | Average No. per Game |
|---|---|---|---|
| Backboard shots | 4917 | 56.7 | 61.5 |
| Rim shots | 1504 | 17.3 | 18.8 |
| Clean baskets | 1114 | 12.8 | 13.9 |
| Completely missed shots | 1146 | 13.2 | 14.3 |
| TOTAL SHOTS TAKEN | 8681 | 100.0 | 108.5 |

From the point of view of an investigation, the most significant fact represented in Table 1 is that the backboard is used on only 56.7 per cent of all field-goal attempts.

Table 2, which shows the successful shots made with the backboard and without the backboard, supports this contention. All shots not hitting the backboard are lumped together.

TABLE 2—SUCCESSFUL TRIES FOR GOAL

| Termination | Total Shots | Number Successful Shots | Per Cent Successful Shots |
|---|---|---|---|
| Backboard shots | 4917 | 980 | 19.9 |
| Non-backboard shots | 3764 | 1126 | 29.9 |
| TOTALS | 8681 | 2106 | 24.3 (Av.) |

Of 2106 successful shots, 980, or 46.5 per cent, were made with the aid of the backboard while 1126, or 53.5 per cent were made without the aid of the backboard.

In a more detailed consideration of the 4917 or 56.7 per cent of the shots which

hit the backboard, Table 3 is designed to show the distribution of the attempts in the various areas into which the backboard was divided (See Diagram 1 for the areas.)

TABLE 3—DISTRIBUTION OF SHOTS ON BACKBOARD

| Area | Number of Shots | Per Cent of Backboard Shots | Number Per Game |
|---|---|---|---|
| 1 | 3913 | 79.6 | 48.9 |
| 2 | 284 | 5.8 | 3.5 |
| 3 | 53 | 1.1 | 0.7 |
| 4 | 516 | 10.5 | 6.5 |
| Edge | 151 | 3.0 | 1.9 |
| TOTALS... | 4917 | 100.0 | 61.5 |

TABLE 3 (Cont.)—DISTRIBUTION OF SHOTS ON BACKBOARD

| Area | Number of Successful Shots | Per Cent of Successful Shots |
|---|---|---|
| 1 | 980 | 25.0 |
| 2 | 0 | 0.0 |
| 3 | 0 | 0.0 |
| 4 | 0 | 0.0 |
| Edge | 0 | 0.0 |
| TOTALS | 980 | 19.9 (Av.) |

Even more significant than the figure of 79.6 per cent of backboard shots striking Area 1 is the column of zeros opposite all the other areas under the heading of successful shots. Of the 20.4 per cent of the shots which hit outside Area 1 on the backboard, not a single one was successful. On the basis of the eighty games covered in this investigation, it appears that the parts of the backboard outside Area 1 are unnecessary. From the standpoint of successful backboard shots, removing all the area except a semicircle two feet in radius above the level of the basket would make no difference.

The unsuccessful shots are of less importance but in terms of rebounds they are significant. If we use the average figures for a single game, Table 3 shows that 61.5 shots struck the backboard. There were 980 successful backboard shots, an average of 12.2 per game. The difference, 49.3, is the average number of rebounds per game. Of these, 3.5 hit Area 2 and 0.7 hit Area 3. If these parts of the backboard had been removed, it is likely that nearly all of these shots would have gone out of bounds at the end of the court. Data collected on several hundred high school games in 1940 show that the average number of out-of-bounds at the end of the court was 31.5 per game.[1] Out-of-bounds situations are undesirable since they require an official decision and interrupt the continuity of play. However, an increase of 4.2 (3.5 plus 0.7) situations per game would not represent too objectionable a change. At least partial compensation would lie in the removal of the same number of rebounds from the area in front of the basket.

Contributing more materially to the relief of the congestion in the free-throw lane would be the removal of Area 4, below the level of the rim. An average of 6.5 shots per game which strike the

*(Continued on page 36)*

[1] Unpublished paper, Illinois High School Athletic Association, May, 1940.


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The ATHLETIC JOURNAL

*Nation-Wide Amateur Athletics*

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JOHN L. GRIFFITH, Editor

# *The Value of School and College Athletics in the Present Crisis*

By

JOHN L. GRIFFITH

VI.

## *More Time Needed*

FOR some time we have been attempting to focus attention on the responsibilities that the nation's school and college physical training departments will have in time of war. We have called attention to the fact that all of our institutions are being, or will be, subjected to a test as regards their value in times of war.

We have no desire to attempt the role of a prophet. There are certain trends, however, that we should consider. For instance, men in high places are suggesting that, after this war is over, we should go on a compulsory military training basis. The purpose of this editorial is not to discuss this plan. It may be that, if we do adopt a compulsory military training program for the next twenty-five or fifty years, it will apply largely to high school graduates. Of this we cannot be certain.

We have called attention to the two schools of thought regarding this matter. The one was exemplified by France before her collapse in the present war. Her school boys did not receive physical training as a part of their educational work but, when they were graduated from school, they were sent into the army for two years where a great deal of attention was given to physical training.

The other school of thought has been represented by our own country where the schools have assumed the responsibility of giving the boys adequate health and physical education attention while they were enrolled in the schools. This meant that the boy was not taken away from the church, the home or the school in order to give him the rudiments of military training, because, after all, physical training is the basis of military training.

What we will do in the future depends largely upon what we do during this war period. If we can demonstrate that the schools can give the boys all of the physical training that they need along with their academic instruction, then those who like the second plan better than the French plan will have something on which to base an argument.

We often hear it suggested that the schools have to devote time to a great many courses and activities and consequently they cannot give more time to physical education. If we are going to be realistic, however, about this matter, we should not sacrifice the activities and courses that have to do with training young men for military or naval service.

We wish to reiterate that our schools and colleges have done far more than is generally realized in the matter of promoting physical education activities. We have frequently called attention to the fact that our high school athletic grounds and buildings are fairly adequate for carrying on the work in question. The work in the grade schools has been in many instances sorely neglected and in far too many cases there is not available proper equipment for conducting a well-rounded physical training course.

We have also called attention to the work that has been done since the last war in the matter of training men and women to be physical education instructors. We have stated that there were more than 50,000 coaches, athletic directors, health experts, and the like, conducting this work in our educational institutions. We have been told, however, that our figure is too low.

All that we have been trying to say leads up to the one thing that we want to emphasize and that is this, that educators have not given their physical education teachers a chance to do the work that today the nation feels the schools should be doing. An hour a week per boy is not enough. As a minimum every boy who is physically fit should be given at least three full hours a week of body-building exercise, of sports, and other activities which have to do with the bodily development and the health of our boys.

Already some of the physical education directors have written us that their schools are meeting the challenge of the day in that they have made it possible for the instructors to do a worth-while job. If your school is one of these, will you write us a short statement, telling what you have done, giving us permission to print it in some following issue of this magazine? Your step in the right direction and your experience will help others and, it may be, will encourage others to follow your example.

The school and college athletic men have never been hesitant to accept a challenge. They are today challenged as never before to undertake a difficult task. That task largely consists of convincing the school and college authorities that it is necessary for them to set aside enough hours of physical training work for each boy. Will you co-operate in this educational problem by sending us a fifty-word outline of what your school is doing?

# Christmas Greetings

*from*

## THE ATHLETIC JOURNAL

AGAIN we are taking the opportunity of wishing all of the coaches and others who read the Athletic Journal a Merry Christmas and a Happy New Year. Twenty-one years ago when we started this publication, we had just emerged from a world war. Today we are arming again and are training our young men for whatever eventualities lie ahead of them. Whether or not we believe that the United States should send an American expeditionary force to Europe, Africa, or Asia, we all agree that we should see to our own defenses. On this question there can be no argument.

Many of our coaches and athletes whom we have reached directly or indirectly during the last twenty years are now in uniform. We honor them and say to them, "We know that you will carry on in the same fine way that you carried on in your athletics." Participation in interscholastic and intercollegiate athletics is sure to develop to some extent a fine appreciation of loyalty. Whether loyalty is expressed as loyalty to self, loyalty to the coach, loyalty to the team, loyalty to the school, it does not matter too much. Taken by and large, a boy who plays his heart out in a basketball or football game or runs a race or engages in any other strenuous sport knows what it is to forget his self interest and to submerge his interests in those of the team.

When a boy is a member of any military or naval unit and goes into action, he again forgets self and knows that he will give all that he has, even his life, if necessary, for the common good.

To the thousands of coaches and athletes who have not been called to the colors but who, to a man, will do their part in whatever way seems best, we wish you also the best of the holiday season. We have no claims on any of you men who are coaching or playing. We have no right to utter preachments but we do feel a sort of a personal interest in every one of you. We follow, in so far as we can, your work in athletics and we glory in your victories and successes and know that America's school and college athletics are safe in your hands. There is a whole lot more good than bad in our athletics and we feel that the men who are conducting this work in the educational institutions are each year a finer and finer lot. To all of you, then, we say Merry Christmas and Happy New Year.

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**ABSORBINE JR.**

# Preparation for a Spring Baseball Training Trip

*(Continued from page 16)*

cannot hit the ball), there are three points emphasized. First, the regular batting stride should be taken. Second, hit only good pitches. Third, the constant order is, "Throw good ones and they will come back to you."

I do not like to see a young ball player fail to take his batting stride while swinging his bat. I prefer that he should use the same action that he uses when he is at the plate. If the bat is held rather loosely, the rebound of the ball off the bat is not too swift for the inside work. A loose grip of the bat with a lightening of the grip at contact with the ball in regular hitting gives better results and causes fewer cracked bats. Tight grips tense the muscles and the bat is often rolled on the swing. Tense muscles do not give good control of the swing. A loose grip and a regular stride are not out of order in this indoor work.

"Throw good ones so they will come back to you" is common sense in this type of work-out. Throwing too soon or poor pitches mean bad balls coming off the bat. If they come straight back to the throwers in each group there is no danger of hitting others in the next group on either side, nor is any time lost by the hitter, in chasing balls. Allow the batter to recover after each swing before throwing to him. This work must be serious.

With each man permitted to tap the ball for five minutes, if there are three in each group, it takes only fifteen minutes for each man to take his turn at the plate.

When it comes to bunting practice we organize a little differently. We prefer the front-facing stance to begin with. We have only one man throwing while the others in each group move up nearer to the batter to field the bunts. We prefer the pitches to be quite speedy. Bunting a slowly lobbed ball is not true to game conditions and is useless.

One procedure is to let the men bunt for three minutes each, then on the next round let each bunt the first ten and then tap the ball for the rest of the three or five-minute period.

In an hour-session the time scheduled may be arranged as follows: arm warm-up and battery work for a half hour; tapping the ball five minutes each, twice around, or bunting and tapping the last half hour.

On Saturday mornings the work can be varied by battery men coming for the first part of the session and then batting and bunting later. The battery men may try their pivots used in throwing to various bases. They should try pitches without a wind-up as is the case, when there is a runner on base. Regulation distance for pitching should be used at all times, once the arms are in shape. A wooden pitching plate, three quarters of an inch thick, may be rigged up for each pitcher by having small nail holes made through the plate and in the cracks of the floor. Short nails then will keep the plate in place. The nails may be attached to the plate by short strings so they will not be lost.

### *Drag Bunting*

Drag-bunt practice may be tried on Saturdays for a variation. The following organization is effective: Divide the squad into four groups with two groups lined up with bats while the other two prepare to field the bunts. Place the home plates in the corners of one of the long sides of the gymnasium. This allows the two pitchers to be a good distance away and almost beside each other, but each facing away toward his own base. Each batter steps up and tries to drag-hit the ball and dash for the base. The ball is fielded in regular style.

Thus we have prepared our players to make their spring tour and we have not fared too badly. Whenever we have been lucky enough to have three or four days of clear weather for outdoor work just before the trip we have won more games. For the past four seasons our team has left with snow on the ground and has been the first of the Northern teams to play a game in North Carolina.

By the co-operation of Amherst College our squad usually has one session in the Amherst cage just before making the trip. This allows the holding of a hurried try-out for the trip. The first fifteen minutes is given over to warming up two or three pitchers while the others play pepper games. Home plates are alternated down the center of the cage so no batter is hit by balls thrown to another batter. The balls are hit rather hard because the receivers are back up against the opposite sides of the netting and far enough apart to eliminate danger.

We make note of certain data about each new man, as he comes up to bat. This data tells how he holds his bat, where he stands in the box, how he steps and what success he has in hitting the pitches.

This is our system of early training. As stated before it is controlled by the time element and the facilities. More time and better facilities might give more and better preparation. Our players consider their training trip so valuable that they are willing to stand the expense of the trip. They often state that they would spend an equal amount at their homes during that vacation and would not see the country nor have the training that they receive on these trips.

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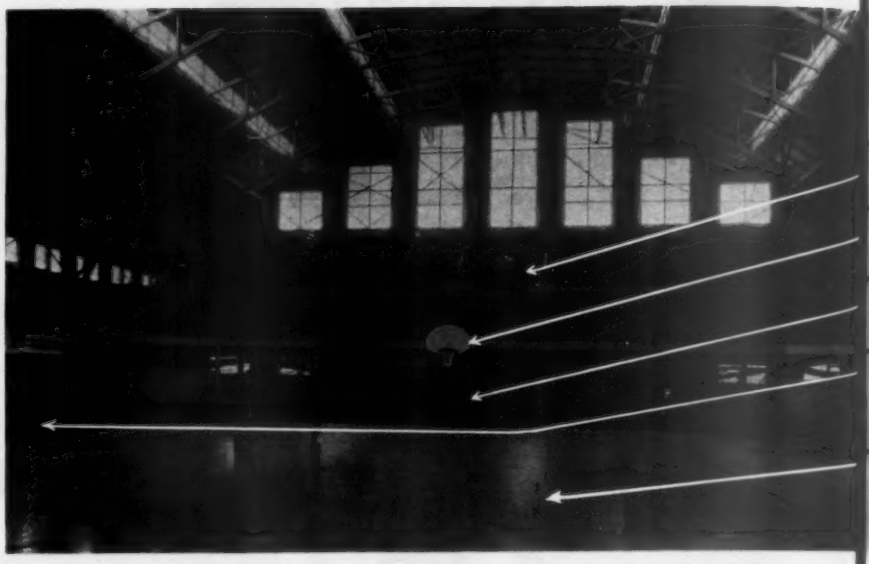

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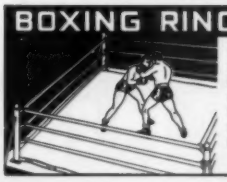

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# High School Basketball of Championship Caliber

*(Continued from page 14)*

set plays, but revolved around one guard whose tactics were to shoot from the outside. They depended upon very good rebound work by the front men and upon clever dribbling around the other front line men, who set themselves up as pivots.

De Pere won over Antigo for consolation honors, using a zone 2-1-2 defense. On offense they used a quick break whenever possible. On set attack they used the center-pivot play built around their center and one guard. De Pere was coached by Gerald "Dad" Braisher, who completed his twentieth year there, having won the Class B championship in 1934.

Antigo, coached by Joe Capicek, used both a quick-break and delayed offense without set plays, stressing the quick break against zone defenses and depending upon good ball-handling with a pass-and-cut system.

An effective type of defense was a combination of man-to-man and zone, with the two front men playing zone and the three back men playing a loose man-to-man with a checking plan. Monroe, coached by Don Huddleston, Beaver Dam, coached by Augie Vander Meulen, and Bill Olson's Shorewood team were the chief exponents of this system. On offense, these three teams varied greatly. Beaver Dam used a modified double pivot system, while Monroe depended upon an organized free-lance plan with three men in and two out, based upon floor positions for its continuity. Shorewood employed a form of continuity offense based upon a four-man weave, with a pass and follow-your-pass principle.

Carl Klandrud's Wisconsin Rapids aggregation, Superior East, coached by Muff Johnson, Coach Ben Trewyn's Kenosha team, Cabby Ewer's Edgerton club, E. W. Beran's Cumberland squad, and Chippewa Falls, coached by Art Paff, used a man-to-man retreating defense with a checking plan. Taylor, a Class C school, coached by Selmer Hulett, made a very good impression, effectively using a strict 2-3 zone.

All teams used the quick break when the opportunity presented itself. Chippewa Falls and Shorewood were less inclined to it than were the others, preferring to play deliberately and conserve energy.

# Meet the 1941 College Championship Coaches

*(Continued from page 12)*

Series II shows in Diagram 26 that 2 may pass to 1 cutting back of 4. Series III would show a pass from 2 to 5 to 1. Series IV would set up the original no-dribble continuity.

A second cross-court dribble sets up two diagonal passes for possible scores, as shown in Diagram 28. A longer diagonal pass from 3 to 1 may give a score by 1 on one side of the basket. A second and shorter diagonal pass from 3 to 4 gives a better scoring play on the opposite side of the basket as 4 passes to 2 going around 5 as a screen.

The teaching of the two basic continuities makes the plays come easily. They are more easily executed on the floor than described on paper. They are within the grasp of any age-group in basketball. If not used as a system of offense, they are still helpful in teaching both offense and defense. They have been helpful to our teams and enjoyed by them. We hope they will be the same for others.

# The Golden Jubilee of Basketball

*(Continued from page 6)*

Canada; William R. Chase of New Bedford, Mass.; and Lyman W. Archibald of Warren, Pa. The New York press, as well as the entire nation's press responded beautifully to the affair and presaged a successful Golden Jubilee campaign.

The celebration will be inaugurated in Madison Square Garden with a Golden Jubilee Tournament. This will open on Wednesday, November 19, 1941, and conclude on November 24, and will bring together four of the outstanding amateur basketball teams in the country—20th Century Fox of Hollywood, national A.A.U. champions; Philips 66 of Bartlesville, Oklahoma; Legionnaires of Roanoke, Southern and Middle Atlantic champions; and Ohrbach A. A., metropolitan champions.

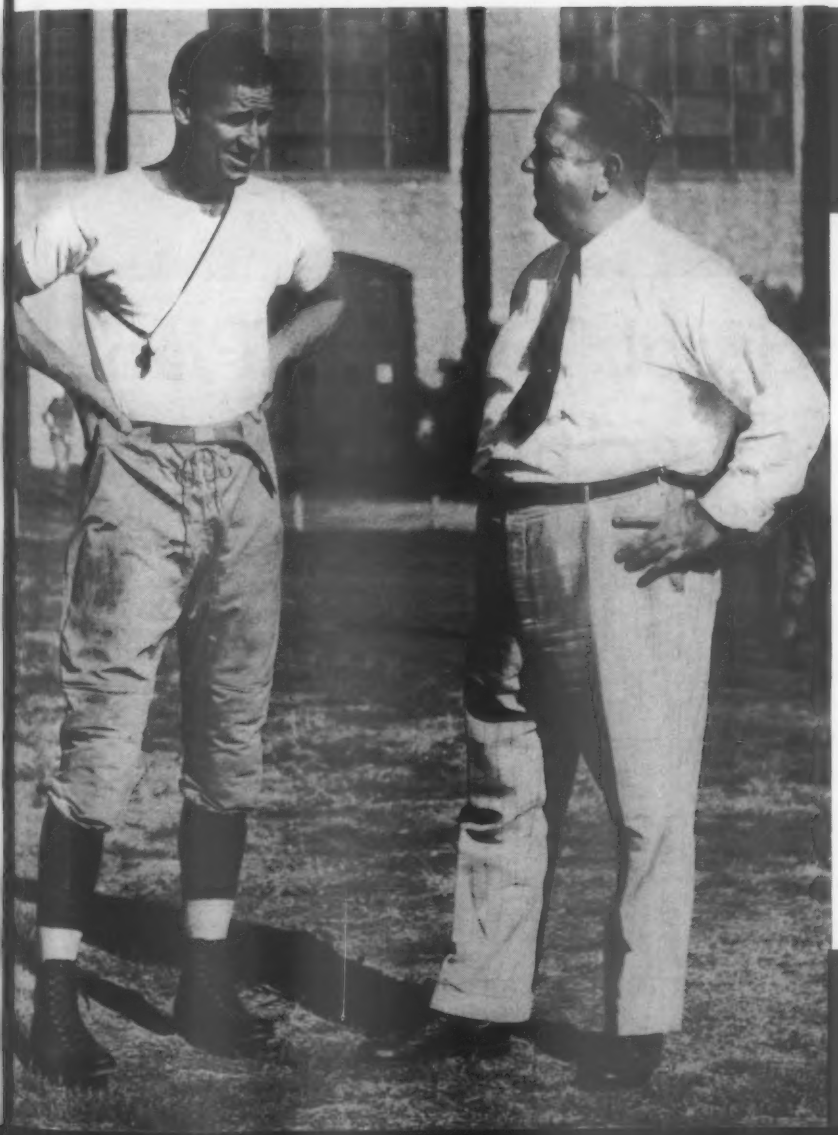
Following this the Middle West, hotbed of the sport, will take up the spirit of the occasion and will launch the celebration there with the Chicago American All-Star game in the Chicago stadium on the night of November 29. Thereafter, thousands of college, high school, prep school, A.A.U., Y.M.C.A., church and institutional games across the nation will be played as Golden Ball games, the net proceeds of which will be turned over to the fund being raised for the memorial.

# TRAINERS JOURNAL

SECTION

THE NATIONAL ATHLETIC TRAINERS ASSOCIATION

DECEMBER, 1941 No. 4



Official Publication
Of the National Athletic
Trainers Association

Feet and the Athlete
Jay Colville

The Common Cold
Dr. Wilbur Bohm

Taping Foot Injuries
Bill Frey

Trainer Ollie De Victer and
Coach Don Faurot
University of Missouri

# The High School Trainers Plan in Operation

WHEN the National Athletic Trainers Association announced in the September issue of the Trainers Journal that they would this year sponsor a high school student trainers plan, they little realized that this would meet with such a nation-wide response. In all new enterprises much time is required for educational and promotional work. The student trainer plan caught on at once.

Coaches saw at once, that they themselves would be greatly benefited by the assistance of four boys in their taping requirements. Administrators realized that, although only four student trainers would benefit from the knowledge gained, it was much worth-while to have even as few as that number interested in a worthwhile subject. Some of these administrators, who have been especially interested in the subject of injuries in athletics, felt that the services of four additional trainers would insure a decrease in injuries.

It is not too late for schools to start the program this year. The student trainers may still secure the back lessons and start work so that they will be that much better equipped for the football season next year when the training work is heaviest.

To keep up the interest of the student trainers, the National Athletic Trainers Association plans to keep in touch with the boys enrolled through their coaches. These boys will receive a trainer's certificate at the end of their course and will be entitled to wear the bronze insignia of the National Athletic Trainers Association as described elsewhere in this issue.

There is another angle, a broader angle, than that of benefit to the athletes and to the student trainers. There is the defense angle. When the plan gets on in full working force, we can visualize 80,000 student trainers throughout the country. These boys, a jump ahead of the other boys in the communities because of their knowledge of how to care for injuries may be called upon to help in the defense work.

***THIS month the high school trainers' team represented in the picture above is from Liberal, Kansas. Reading from left to right, Charles Ferguson, freshman; C. G. Thompson, coach and supervisor of the training course; N. B. Mahuron, superintendent; Charles Tice, sophomore; Bertou Dubois, senior; Dr. A. L. Hilbig, Medical supervisor and Gene Overholt, junior.***

THE
# TRAINERS JOURNAL
SECTION

*Official Publication National Athletic Trainers Association*

December, 1941 No. 4

Officers National Athletic Trainers Association
For 1941-1942

President, Lloyd Stein, University of Minnesota
1st Vice-President, John Kelly, New York University
2nd Vice-President, Henry Schmidt, Santa Clara University
3rd Vice-President, Wilbur Bohm, Washington State College
Executive Secretary and Editor of Trainers Journal, Bill Frey
Office of Publication, Iowa City, Iowa

## *The Football Season Is Over*

THE football season is over. This means a breathing spell for the trainers from the strenuous days of the last three months.

Let us now get our bearings and go over a few things regarding the Trainers Journal and the National Athletic Trainers Association. We announced in September that we as an association would sponsor the high school student trainers plan. This we have done and the response from high school coaches and their student trainers has been most gratifying. You trainers can talk this up in your communities and explain our plan in detail to high school coaches in your localities.

As to the Trainers Journal, we want your suggestions and your co-operation. Some of our members have been on the job throughout the busy football season. They have written articles and made helpful suggestions.

We must remember that the organization is new and that every member must do his part. First check your memberships. Have you renewed? Keep in touch with the home office. Send your articles and your suggestions there.

The insignia that we have been working on at the suggestion of several members is now ready as explained elsewhere in this issue.

A reduced size of the certificate is also shown in this issue. New members should communicate with the home office regarding their certificates.

The general meeting of the trainers will not be held this year as tentatively announced.

## *Christmas Greetings*

The officers and trustees of the National Athletic Trainers Association extend the season's greetings to the trainers and coaches of the schools and colleges.

## *UNDER THE SHOWERS*

THE author of the article "Feet and the Athlete" in this month's issue of the Trainers Journal, Jay Colville, is head trainer at Miami University, Oxford, Ohio. Jay has invented a portable water system for use on the football field. It is built of light material, mounted on wheels. Through gadgets on the top, water is transmitted in the form of a vapor.

☆

HEAD trainer at the University of Oregon, Bob Officer is also manager of the state of Oregon for the National Athletic Trainers Association. Bob recently wrote me that he hopes that we have a national clinic before many years. He also suggests an insignia in the form of a pin or fob for the members of the National Athletic Trainers Association. We have been working on this and now have a picture of the proposed insignia in this issue of the Trainers Journal.

☆

CHAIRMEN for the various conferences are being appointed. The list will be ready for the January issue.

☆

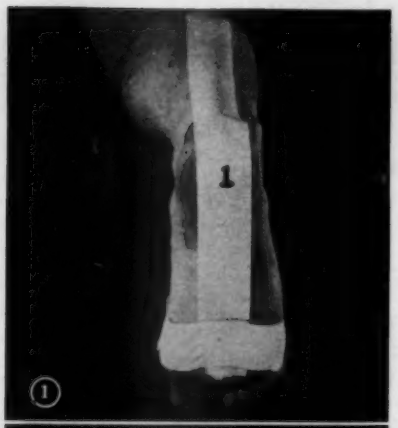
IN ADDITION to his work as athletic trainer at Washington University of St. Louis, Elmer Hill is an expert at building protective equipment. Hill was one of the charter members of the National Athletic Trainers Association. His continued interest in our association and co-operation in helping to get the organization going are appreciated.

☆

THE training program at the Fourth Annual Coaching School of the Georgia Athletic Coaches Association, held last summer at Athens, Georgia, was handled by Fitz Lutz, athletic trainer at the University of Georgia. Lutz gave a good demonstration of training methods and his work was much appreciated by the coaches attending the school.

*(Continued on page 35)*

# Taping for Foot Injuries



## High School Trainers Lesson No. 4

THIS is the third in a series of articles on taping for injuries and the prevention of injuries. Percy Quinlan's article on Ankle Injuries in the September issue was followed in the October issue by an illustrated article on the taping of ankle injuries. The November issue carried a description of knee injuries and an illustrated article on taping. Shin Splints will be discussed and illustrated in the January issue.

Illustration 1. The foot should be in a normal position. Start the tape (1½ inch size) at the ball of the foot, running it toward the heel, up and over the calf of the leg. It is advisable to use at least three strips of tape, running them one over the other.

Illustration 2. Using 1½ inch tape, attach it on the ball of the foot directly over the end of tape number 1, pulling the tape to the outside of the foot and over the ankle bone. Continue it around the back of the heel, up the shin bone and over it, as shown in Illustrations 3, 4, 6, 7 and 8. In all illustrations, tape B is the binder.

Illustration 5 shows tape number 3 on the inside of the foot applied in the same manner as tape number 2 in Illustration 2.

Illustration 6 shows tape number 2 as it crosses the shin.

Illustration 7 shows the conclusion of tapes 2, 3, 4 and 5, with binders in place to hold tape number 1.

Illustration 8 shows the binder in place to hold tapes number 2, 3, 4 and 5.

Illustration 9 shows the finished bandage viewed from the bottom.

Illustration 10 shows a gauze finish in figure-eight style.

This taping is used for strengthening muscles and tendons in the calf and in the ankle.

# Feet and the Athlete

*By Jay Colville*
Miami University

THE part of the body with which the athletic trainer deals most often is the foot. In my contact with athletes I have come to know them by the appearance of their feet as quickly as I recognize their faces. This is because constant efforts are made to protect the foot and ankle from injury. If proper precautions are not taken to avoid it, the ankle sprain is, no doubt, the most common athletic injury. Fortunately, by using the ankle wrap during practice sessions and by strapping for contests, ankle injuries have been cut down to a minimum. We seldom have a boy out of a contest because of ankle injuries.

It has been found that athletes, and the general public, too, are negligent in the care of their feet and in personal hygiene of the feet. I find, particularly among freshmen athletes, that their feet have been neglected. A boy may be immaculate as to his hair, dress and clothes, but careless about his feet. Although the feet are the most used and hardest used part of the body, they are often given the least consideration, possibly because they are covered up and kept out of sight. The two most common causes of foot trouble are improperly fitting shoes, and improper care of the feet. Most athletes have fair feet as far as structure and stance are concerned. One of the mistakes which high school athletes frequently make is that they cut their nails round instead of straight across. This often results in an ingrown toenail in the great toe. Hard corns on the outside of the small toe, and the painful soft corns on the inside of the toes may generally be traced to a pair of poorly fitting shoes. Feet which have not been given proper care often have an odor that is far from pleasant, and the boy oftentimes does not seem to realize that this condition exists. Another frequent condition is ringworm, or athletes' foot, as it is most commonly called. This is generally in a mild form and may be quickly cured. We have as yet barred no one from athletics because of ringworm, due to many good, safe medications now manufactured which make it impossible for the athletes' foot germ to exist. It is a general practice in most dressing rooms and shower rooms in the larger schools to disinfect the floors every day. This applies to showers which have an opportunity to dry out at least once every twenty-four hours.

In my experience I have found that boys' feet are in the poorest condition at the beginning of the school year. My first duty at the beginning of the football season is to examine feet, primarily for corns, ringworm, toughness of the skin and injuries which may have occurred during the summer vacation. The poor condition of the feet at this time is usually due to the fact that the boys have not had the facilities and drugs with which to care for their feet as they do during the training season. In other words, when they are practicing daily they have regular showers and it is easy to apply alcohol and powder, because they are kept in quantities and near at hand in the training rooms. It has been a great satisfaction to me to see the permanent improvement in a boy's personal hygiene. I have threatened sophomore boys by telling them I would take away their training room privileges if they did not do something about their feet. The result is they leave school with good feet and an understanding of how to keep them that way.

Here are a few hints which may be helpful in teaching foot health to students. They are so simple it hardly seems necessary to mention them. The general public has become so foot conscious as a result of widespread publicity by radio, etc., that a simple condition which, in former years, would have been regarded as an indication of a need for more frequent use of soap and water is now brought to the consulting rooms of a dermatologist. People have a notion that this condition must be cured by some drug and forget the prevention angle. In my experience as a swimming pool manager it has been discouraging to see people deny themselves the pleasure and healthful benefits of water and sunshine by staying away because of fear of ringworm. As a matter of fact, the modern swimming pool with its shower baths,

antiseptic foot baths and chlorinated water, and the opportunity afforded there to expose the feet to fresh air and sunlight, offer the very best possible prophylactic and curative treatment for this common ailment.

My advice to anyone who has foot trouble such as excessive sweating, which causes the skin to be soft and appear white, or ringworm is as follows: Expose the feet as much as possible. In warm weather an athlete may carry his shoes to and from the practice field. Expose the feet on the sand at bathing beaches. This will tend to strengthen the feet materially. Remove the shoes at the middle of the day. Place them in a box on the window ledge while they are not in use. This will air them. During the summer wear light, loose fitting shoes and thin stockings. Bathe the feet frequently, using soap and *cool water*. Thoroughly dry the toe interspaces, apply alcohol, allow it to evaporate, and then dust freely with some antiseptic powder. The fact that women have ringworm less often than men convinces me of the wisdom of the above treatment. They wear lighter, lower shoes which are better ventilated and they change them oftener. One can hardly fail to notice the silk hose drying in almost every co-ed's window. I do not doubt that if we wore close fitting gloves summer and winter, fifteen hours a day, "athletes' hand" would be as common as athletes' foot.

A condition of the feet which must be given serious attention is that of blisters. This is particularly true at the beginning of the football and basketball season. The blisters are apt to appear early, before the feet have become accustomed to hard usage. This condition has been helped a great deal by the better shoes now available and by skin tougheners such as tannic acid and tincture of benzoin. I have used the latter with much success. It is administered in the dressing room. I have a pan containing bottles of benzoin, the boy paints his feet with the liquid and then steps in a pan which contains a layer of purified talcum powder. The powder prevents the socks from sticking to the soles of the feet. This is done prior to practices and may be repeated after practices. Generally ten days to two weeks of this treatment is sufficient. I warn the boy to remove his shoe at the very first sign of irritation. If he does this, a blister may be avoided. Otherwise the skin will become loose, a fluid will form under the skin, and medical care will be necessary for a few days.

Blisters generally form at four places on the foot. They are most prevalent on the ball of the foot, on the ball of the great toe, on top of the toes, and high up back of the heel. The latter are the most difficult to treat because they heal by granulation and this is a slow process. They are caused by too tight or too loose a counter. These blisters are most apt to become infected. Once a blister forms, open it near the outside, drain the fluid off, and allow the loose skin to remain for one day to protect the tender skin underneath. The following day remove the skin, spray the area with tannic acid, and apply a wet dressing to it before practice and after it. Continue this treatment until the skin is healthy enough to get along without the bandage. Give the boy bandages to take to his room so that he can expose the foot through the night. If the blister is on the back of the heel, it may be necessary to place bunion pads around it to ease the pressure of the shoe. For blisters on top of the toes, place a very thin bandage over them, because they have been caused by a too close-fitting shoe. Determine the cause of the blister and endeavor to remove that cause as quickly as possible. Blisters on the bottom of the feet are generally caused by cheap socks that roll up or wrinkle under the feet. If your supply of socks is limited, use your best socks early in the season. For basketball we use two pairs of socks, a thin pair next to the skin and a thick pair over them. This tends to give a sliding pad effect to the soles of the feet. I have found chiropodist tape to be very useful in the case of tender feet. It is a light felt with an adhesive side and acts as a cushion for the balls of the feet.

Hard corns are nothing more than callouses on the toe. They are caused by pressure from a poorly fitting shoe and unless they are kept trimmed down they will be painful under pressure of the shoe or of a sock that is too small. It is sometimes possible to cure a corn completely by keeping it covered with a piece of adhesive tape for a number of days. This generally softens it to the extent that complete removal is possible.

A little pressure by the men who are in a position to exert it can do much toward improving foot conditions among our athletes.

# The Common Cold

*By Dr. Wilbur Bohm*
**Department of Physical Education and Athletics, State College of Washington**

THE particular ailment which is considered in this article needs above all others to be made a subject of hygienic education. This is true first, because the common cold is the most frequent of all diseases; second, because its consequences are serious; and third, because it is an affliction which, to a very great extent, is preventable.

The common cold is certainly one of the most universal of the ills to which flesh is heir. The doctor, as well as the layman, has had his personal experience with it. It affects all alike, rich and poor, old and young, white and black. It occurs in all climates, in all countries, and at all seasons.

A workable definition of the common cold is as follows; an acute disorder presenting its most obvious symptoms in the nasal passages, occurring most frequently in the temperate climates, usually most frequently in the fall and early spring, and attacking great numbers of the population almost simultaneously. The layman uses the term "a cold" to designate almost any type of inflammation in the body, but more often for any respiratory disturbance. The doctor may use the term rather loosely to designate inflammation in any part of the respiratory tract and accessory structures.

Located as it is at the very threshold of the respiratory tract, the nose is, in a sense, an internal organ with an external exposure, and it must bear the brunt of the attacking hordes of germs, together with dust and other impurities entering with the inspired air. A very special reason why colds have their favorite seat in the nasal passages is that in the performance of its respiratory functions, the nose has not only to warm but also to moisten the inspired air. Therefore it must react to variations in the physical properties of the surrounding atmosphere, and it is these variations which are looked upon as the chief cause of colds.

There is evidently still some idea abroad that a cold is something very different from an inflammation. But we must recognize it as an inflammation, caused by the same agents as any inflammation, and requiring the same sort of treatment.

The uncomplicated head cold, confined to the nasal passages, is technically an acute rhinitis or coryza; when the inflammation has extended to the adjacent cavities known as sinuses, we have sinusitis; if the pharynx is the chief seat of the cold, the attack is known as pharyngitis; if the tonsils are involved we have tonsilitis; and if the cold is still lower, affecting the larynx and the bronchial tubes, we have laryngitis and bronchitis respectively.

The cold often leaves some trace of its visit, because it attacks the membrane lining the nasal cavity and the spongy tissue therein, engorges the blood vessels,

and affects many lymph glands as well. Undoubtedly it has injured these membranes, blood vessels and glands to such an extent as to harm them permanently, and in such a manner as to make them more susceptible to future attacks. Another bad feature of a cold is its dangerous tendency to extend. The inflammation often travels up the Eustachian tubes, and, in children especially, gives rise to middle ear inflammation; or it may travel downward setting up a laryngitis or bronchitis.

The cause of colds is a matter for intense discussion. Dr. Irving S. Cutter says, "No single bacillus has been discovered at whose doorstep this miserable affliction can be laid." In other words, we have no bacterium to blame, although a cold so inflames the nasal passages, throat, sinuses, and bronchi as to permit many organisms located in these areas to take a new lease on life and reproduce at an alarming rate.

Walter A. Wells, in his book, *The Common Cold*, holds that colds are directly superinduced by the joint action of microorganisms and of certain unfavorable atmospheric factors, and that one is as necessary as the other.

Dr. Bohrer, in an article in the *Brooklyn Daily Eagle*, states that fatigue is the factor responsible for colds. Fatigue hinders digestion, and causes "pressure areas" which affect involuntary nerve terminals in the stomach and intestines. The stimulus is transmitted through the spinal cord to the base of the brain, and then distributed among delicate nerves which control the blood supply of the areas usually affected in the common cold. Since fatigue lowers one's resistance, and thus can be a causative factor of the common cold, the over-worked athlete should be susceptible to colds. The ailment could thus be prevented, to a certain extent, if workouts are conducted so that the athletes will have "a little bit left" after each practice period. This brings out to the trainer the importance of keeping a carefully supervised weight chart, and of seeing whether the boy holds his weight or regains the lost weight by the time of the succeeding workout, as overwork naturally is responsible for loss of weight and fatigue. That fatigue plays a major role in susceptibility to colds is indicated by an observation which is made by many victims. The individual who maintains his resistance at par, who secures enough sleep, who does not overeat, who exercises moderately, particularly in the open air, may escape season after season, only to succumb when some drop in the body reserve occurs.

For laying the foundation for future trouble in the air passages there is nothing equal to overheated places. The worst thing about confined, overheated air is that such air is likewise overdry. This is a very bad thing for the mucous membrane of the respiratory tract. As its affinity for water increases, it abstracts water from the air passages, which places them under a severe strain, especially since the nasal function has become inactive and sluggish because of the heat. The correction for this is simply cold, fresh air, because it has an immediate stimulating effect upon the respiratory passages, and we feel its invigorating effects at once on mind, body, and spirit.

Dust as another causative agent is important. Persons who work at dusty trades develop regularly certain forms of catarrh, and naturally are more susceptible to colds. If such a person is subject to colds he should change his occupation and generally keep away from dust. In athletics, the dusty playfield contributes to many colds.

Incorrect dress is another cause of colds. To be absolutely effective from a hygienic standpoint, clothes should be efficient absorbers of moisture; they should have permeability; they should be of as little weight as possible and they should not make undue compression on any part of the body.

It seems to be generally agreed that the most common dietetic error which may cause colds is the ingestion of an excess of proteins, together with faulty elimination. This applies particularly to individuals who lead a sedentary life. As we know, the athlete requires a liberal amount of muscle-building food in his diet, of which proteins (meat) are our best source. It is good advice for the chronic "cold catcher" to eat less meat and more vegetables. Care must be taken that we allow sufficient vitamins, so important for vitality and well-being. These may be assured by a generous allowance of milk, yolk of egg, whole-grain bread, fresh fruits, and vegetables.

Any disease which tends to give rise to congestion of the respiratory tract indirectly makes the subject more susceptible to colds by creating a condition of lowered resistance in these parts. A leaky heart, for instance, gives rise to a general passive congestion which includes the mucous membranes. Diseases of the stomach and liver are also frequently responsible for an obstinate catarrhal condition of the respiratory passages. Disorders of the eliminating organs, kidneys, intestinal tract and skin are, above all others, those which have the most unfavorable influences. Too much stress cannot be placed upon the part played by the skin, and its influence upon the respiratory tract. It is an influence for good, if the cutaneous circulation is active and responsive. It is an influence for evil if it is inactive and sluggish. The mucous membranes may also suffer from defective elimination as a result of sluggsh skin with inactive glands, just as they suffer from poorly functioning kidneys and intestinal organs. An extra burden of elimination is thrown upon the respiratory membranes by toxins which are not eliminated as usual.

The nasal organs in addition to their olfactory and respiratory functions have certain duties to perform in connection with the heat regulating operation of the body. While about 78 per cent of the heat of the body is eliminated by the skin, most of the remainder is eliminated by the nose, and in this capacity the latter organ must be regarded as a sort of adjunct to the skin. There is in fact a close relationship between the blood supply of these two systems through the sympathetic nervous system.

Various disorders of the blood itself may have to be considered as possible causes of colds. Anemia in its different forms may give rise to various disturbances in the upper air passages.

In children, the adenoids are the most prolific causes of head colds. We do not need to press the point, as it is well recognized by parent and physician. Again, chronic tonsilitis, diseased turbinates, a nose that has been broken, or a septum that has been deflected, invariably cause frequent colds. So often we see that an individual who has been suffering from the above abnormalities seldom suffers from a cold after such abnormalities have been corrected.

In the adult, it is held that sinuses which are diseased are more often responsible for cold attacks than anything else. In the case of the ever-present cold, a cold that never seems to leave, we may look for a focus of infection in one of the sinuses, the ethmoid, frontal, maxillary or sphenoid.

Among athletes in particular the most frequent causes of the common cold are: They stand around on the athletic field, or in the gymnasium during the practice session of any particular sport, and cool off after working up a good perspiration; They do not dry their hair well and do not cool off properly after taking the shower before going out into the cold air; They overwork with the result they are fatigued.

Ten good rules to follow in prevention of colds are:

1. Keep away from those who cough and sneeze.
2. Wash the hands often, especially before eating.
3. Never use a public drinking cup or towel.
4. Do not eat from dishes that have not been sterilized.
5. Wear clothes enough to keep warm.
6. Live in ventilated rooms of temperature 68 to 70 degrees.
7. Keep the feet dry. Wear overshoes in wet weather.
8. Cool off gradually after any exercise or perspiration.
9. Sleep in fresh air (not in a draft). Open the windows at night.
10. Maintain your resistance.

The typical cold is characterized by three stages: first, the dry stage; second,

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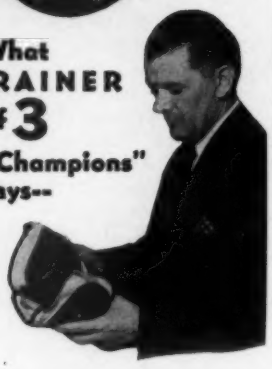

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**Iowa City, Iowa**

the stage of watery secretion; and third, the stage of mucous secretion. During the first stage, the mucous membranes are swollen, dry, and excessively sensitive. The second stage, which lasts usually from one to three days, is marked by the occurrence of abundant watery secretion. The third stage is characterized by discharges assuming a mucous or muco-purulent character. At the onset of this stage the acute constitutional symptoms, which have been present until now, usually subside.

Treatment that is proper to one stage of the affliction may be entirely inappropriate to the other. In the first and second stages the constitutional symptoms are prominent and internal treatment is indicated, but on account of the highly sensitive state of the mucous membranes, local treatment is generally to be avoided. Hot drinks, which are sometimes beneficial in the early stage of a cold, are of no value in the latter stages.

When it is certain that one has just contracted a cold, evidenced locally by a stuffy nose, and a tendency to sneeze, and generally by a sense of chilliness, followed by a feverishness, headache and general malaise, the wise thing to do is to remain indoors in a comfortable warm room. Rest in bed for a day or two is strongly advised; never try to wear a cold out, and this also means that an athlete suffering from a cold should rest, instead of even taking a light workout to promote a good perspiration, as is so often advised by many coaches. One should take care, also, to keep the body warm and to avoid drafts. One should refrain from cold baths and cold showers. However, a good procedure to follow is to close the bath room from all sides and fill the tub with water as hot as the individual can stand. Drink a couple of glasses of cold water and then lie in the water for ten or fifteen minutes. This should be followed by a thorough drying of the skin; the patient should then go to bed and keep well covered during the night.

### *The Importance of Diet*

The diet should be light, and free from nitrogenous foods. Overloading the stomach is directly harmful, and meats, gravies, fried food, and richly spiced foods are especially to be avoided. Some have secured excellent results by eating often of light, easily-digested foods during the day, but eating only a small amount of food at each helping. The aim is to keep the stomach from becoming empty. One should guard against constipation.

One should partake freely of fluids. A milk diet for a day or two is advisable for those who have no antipathy to milk. As stated before, fruit is permissible and fruit juices in the form of orange, lemon or grapefruit should be given freely. In fact, a fruit juice fast often accomplishes wonders in the treatment of the common cold.

## The National Athletic Trainers Association Insignia

FOR some time we have been working on an insignia for the association that may be worn by its members. This will be made up as a key or as a pin, gold for senior members; silver for junior and bronze for associate members and student trainers. In all keys and pins, the insignia is the same. The prices are as follows:

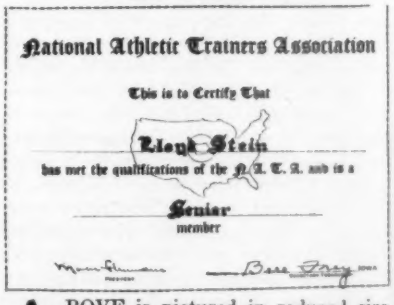
| | Key | Pin |
|---|---|---|
| 1/10 rolled gold plate (Senior) | $4.00 | $2.50 |
| Gold plated on sterling (Senior) | 3.00 | 1.75 |
| Sterling (Junior) | 2.50 | 1.75 |
| Bronze (Associate and Student Trainers) | 2.00 | 1.50 |

If engraving is desired, the cost will be three cents per letter.

Orders should include the full amount of the key or pin and ten per cent for retail sales tax and shipping charges. Purchases must be made through the home office of the National Athletic Trainers Association, Iowa City, Iowa.

—BILL FREY, Secretary.

## The National Athletic Trainers Association Certificate


National Athletic Trainers Association

This is to Certify That

Lloyd Stein

has met the qualifications of the N. A. T. A. and is a

Senior
member

ABOVE is pictured in reduced size the certificate issued by the National Athletic Trainers Association. This certificate, in a size suitable for framing, is issued to Senior, Junior and Associate members. Student trainers, upon completion of the four-year training course as outlined by the Trainers Association will receive a certificate. All inquiries regarding the certificates should be addressed to

—BILL FREY, Iowa City, Iowa.

# Under the Showers

*(Continued from page 29)*

Herb Cormack, one of Iowa's most successful high school coaches, has always had a student trainer. This year he has Buzz Bennett, the son of a prominent doctor, do his taping. Cormack is a firm believer in fine equipment, plenty of training supplies with which to work, and an all-out program to safeguard high school athletes.

Dr. H. E. Farnsworth, one of our senior members, tells a complete story in a very few words. In the space used for "Record as a Trainer" on the membership blank, he wrote, "Twenty years watching over the boys."

Carl I. Youngworth, trainer of the Yankton College teams these past eighteen years, is now stationed at Fort Ord, California. Instead of Trainer Youngworth, it is now Captain Youngworth. Any of you trainers on the west coast who are within reach of Fort Ord, call on Carl.

Eddie Wojecki, head trainer at Louisiana Tech, Ruston, Louisiana, is passing his tenth year as a trainer. First located at Howard College, 1931-33, he then moved to Tech as trainer and boxing coach. Eddie is one of our aggressive trainers and a firm believer in his chosen profession. On these recommendations he has been appointed Chairman of the Northern section of the Southern Intercollegiate Athletic Association. Bill Dayton of Miami is chairman of the Southern and Eastern sections of that conference.

One of our new members this year is Tom Gibbins of the University of Arizona. Tom is also varsity coach and associate professor of physical education. He will be our conference representative in the Border Intercollegiate Athletic Conference.

Steve Witkowski of Wesleyan University is another association member who is suggesting a get-together. Following our inquiry regarding the number of trainers who might get together at the time of the National Collegiate Athletic Association meetings in Detroit, we found so few could make plans on such short notice that it was decided to postpone the national trainers meeting this year. The conference meetings as planned this year will be a starter in our get-together meetings.

While many of us are relaxing a bit following the football season, I will venture a guess that several of our members will be hard at work until after the bowl games. Jake Weber of Fordham will be travelling to some distant point with the Rams, who have had a fine season.

Then there is Ollie De Victor of the University of Missouri. He and his coach, Don Faurot, are shown in our cover picture this month. Missouri, as top-notcher in the Big Six, is sure of a bowl invitation.

Our president, Lloyd Stein, of the University of Minnesota, would be another bowl-game traveller, were it not for the conference ruling that prohibits post-season games. Some work and some satisfaction in getting All-American Bruce Smith back in playing condition after a severe knee injury wasn't it? Smith is one of the greats of modern football and Stein, his trainer, is one of the best.

Scrapiron Young of Notre Dame is another trainer whose school does not favor post-season playing, Scrapiron and his coach Frank Leahy had a great year, congratulations.

Walter Bakke, head trainer of athletics at the University of Wisconsin, is in his fifth year at that institution. Before going to Wisconsin, Bakke was assistant trainer at the University of Illinois and at Ohio State.

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# The Question of the Modified Bankboard

*(Continued from page 19)*

conventional backboard and rebound in front of the basket would pass under the modified board. Since these shots strike at a level of ten feet or lower and are in most cases in downward flight, they would be in play in the end space behind the backboard instead of going out of bounds.

Since there would be edges on the new backboard, it is unlikely that there would be an appreciable alteration in the number of shots striking that part of the board. Removal of Areas 2, 3, and 4 would remove the possibility of an average of 10.7 (3.5 plus 0.7 plus 6.5) rebounds in front of the basket. Out of a total of 49.3, this represents slightly over one-fifth and, in the opinion of the writer, would be a worth-while advantage.

A break-down of the figures into the six types of shots showed no significant deviation in any one from the general trend.

In summary, data collected from eighty representative games and covering a total of 8681 shots showed that 4917, or 56.7 per cent of all shots, came in contact with the backboard. Of the backboard shots, 3913, or 79.6 per cent, hit an area of the board consisting of a semicircle having its center directly behind the center of the rim and a radius of 24 inches. Even more significant was the fact that every successful backboard shot was made by the use of this area of the backboard.

It is the conclusion of the investigator that all the area of the conventional 4 by 6-foot backboard could be removed except for the 24-inch semicircle having its center behind the rim. This backboard would permit the possibility of all the successful backboard shots made with the present board. It would give the additional advantage in playing conditions of allowing approximately one-fifth of the unsuccessful shots, which now rebound into the congested free-throw lane area, to go into the area behind the backboard or out of bounds.

Since the new official board represents but a slightly less drastic departure from the old board than is suggested here, the arguments presented herein would certainly fit the case.

# Survey of Football Injuries in Missouri High Schools

*By Jack Matthews*
**Assistant Track Coach, University of Missouri**

IN any discussion of the values or of the shortcomings of interscholastic football, the question of the nature and frequency of injuries that occur during the course of a game or a season soon takes a prominent place. The writer, after hearing a number of controversies which revolved around the question of injuries in football, became interested in gathering information about injuries, so that future discussions might be based on more than incidental and sporadic observations.

The injuries that occur in interscholastic football and are charged against it may fall more or less naturally into two classifications; first, those that occur during practice periods, and second, those that occur during the playing of the game. Since many more people observe the action in football that occurs during the actual playing of the game than the action during a practice period, most of the questions that arise in the minds of observers come as a result of witnessing a game or a number of games during a season.

Resulting from the discussions and the observations indicated above are points at issue which seem to appear in practically all evaluations of the game, in so far as the discussions and observations are centered around injuries. These points at issue may be written in the form of a series of questions, and this survey is an attempt to answer some of the questions which have appeared.

1. How many injuries occur in football games? 2. How many of the injured players leave the game? 3. How do the injuries occur? 4. What part of the body is injured? 5. When during the game do the injuries occur? 6. Where do the injuries occur? 7. What relationship is there between the types of body injuries and the place on the field where the injuries occur? 8. What relationship is there between the types of body injuries and the types of activities which are being engaged in at the time of the injuries? 9. What relationship exists between the number of injuries per game and the progression of the season?

The Research Quarterly of the American Association for Health, Physical Education and Recreation reports only three studies

# Coaches Built America's First Line of Defense

*By* **L. B. ICELY,** *President*
*Wilson Sporting Goods Co.*

LONG before the present American defense program assumed proportions that make it the most outstanding event in our history, the coaches of school and college teams were building its main foundation — the health and stamina of American youth.

Today the coaches are more than ever a first line of defense in the preservation of democracy and the American way of life.

School teams and college teams have dramatized the active outdoor life and have been the incentive that has made sport and exercise an attractive part of the day's program for millions of individuals.

America is active. America is out of doors . . . and as a result, America is confident in a world where country after country has gone down under the conqueror's ruthless heel.

For the fact that our morale is high and our people are ready for the task ahead, we may in great degree thank the coaches who have labored long hours to build stamina into our young people and to produce contests of such dramatic character that they have stirred the entire nation into action.

Our confidence in the outcome of present events is largely based on health. It is the mass conviction of a nation that has always been a strong athletic nation and is now more interested in sport than ever before in its history.

The athletic fellow has in his physical strength the basic element of courage and confidence. When such individuals by the millions are found in a country's population, and its women are strong and athletic, too, that country has strength, courage and confidence in everything it faces.

Certainly we have our problems, troubles, apprehensions; but have you heard *real fear* expressed by many people? Have you heard anything but confidence expressed about the eventual outcome as far as America is concerned?

For this high morale of the nation, coaches can take a major portion of the credit. We know our industrialists can build the machines to make us supreme in mechanized warfare. It is coaches who have built the men capable of manning them.

Inborn love of athletics and of strenuous competitive games has kept American youth athletic in mind and body. That is primarily the reason our navy is ready and our army rapidly growing into a formidable fighting machine. That is primarily the reason we may be sure that we shall not fail in shops and factories to live up to the proud task that has been assigned to us as the "arsenal of democracy."

In a world living under the threat of domination by powerful ruffian nations, America must *keep* strong. Not only the boys who go into the army and navy, but the whole civilian population as well, must maintain and improve standards of health and stamina.

Some 200,000 of those called up for army service who have fallen below the physical standards required in the emergency will have the opportunity under Uncle Sam's direction and care to climb right back into the self-confident ranks of the strong and sturdy.

Civilians also, on almost all of whom depends in some degree our ability to help the embattled democracies and to defend American institutions and free ways of life, will maintain and improve their stamina and the national morale by increasing participation in health-building athletics and competitive sports.

Our enormous program for the building of needed defense equipment will be paralleled by the building up to still higher standards the physical strength of the people. With stronger bodies will come still greater confidence, still stronger morale. More than ever, "America is out of doors," and America is out to win.

I make this statement with the confidence born of many years of observation at one of the livest "nerve centers" of American sporting life.

As president of Wilson Sporting Goods Co. I have watched the keen, steady growth of American interest in all fields of sport and with my associates have had, I believe I may say, no small part in the encouragement and direction of this important trend through the improvement and development of modern implements of sport and exercise. Better equipment, I think no one will deny, has been one of the most important factors in increasing the attractiveness of play and exercise among America's millions.

The better material and better design that goes into today's golf clubs and balls, tennis rackets and balls, football, basketball, baseball, softball, badminton, squash, handball and gym equipment provides an incentive greater than ever known before for an active, healthful life. Such equipment, therefore, serves a purpose as vital to a strong, confident, enduring America as the materials now pouring into our formidable output of guns, shells, ships, motor vehicles, tanks and planes.

Our defense effort in the production of mechanical equipment for army, navy and air force is of value only as we produce also strong, alert, and courageous people to man such equipment, and a high morale in our citizenry to back them in action. Only a strong and rugged people makes defense possible and makes this great defense effort worth while.

It is my belief and the belief of every specialist in this field with whom I have ever talked, that everything that encourages national consciousness of health and the benefits of physical exercise is important to national welfare in time of peace, and vital to the country's safety and survival when there is threat of war.

The freedom of generations to come may be dependent upon the American interest in athletics and sports and our ability to increase this interest as a part of a nation-wide health-building program NOW.

on high school football injuries from 1930 to the present time. As far as could be ascertained, the previous studies on injuries in high school football by Burnett and O'Brien,[1] Lloyd[2] and Neilson[3] used the questionnaire technique in gathering data. For this particular type of study the questionnaire technique has certain weaknesses. Two of these are immediately apparent. First, the coach may not recall accurately the information desired on the questionnaire. This is possible since the questionnaires may not be filled out at the time of the game but may be filled out several days later. There is, therefore, the possibility that the information may not be reliable. Second, the coach may not wish to include an accurate account of all the injuries that occur, particularly if there is a large number or if the cases are unusually severe.

The technique of gathering data in this study would probably be called a combination personal interview-questionnaire technique, or a combination observational-interview type. The observer gathering the information either watched what was occurring and made his recordings from the observation, or, if the observer did not notice the occurrence of an injury, the information was obtained from the injured player as a result of questioning.

In this study the observer was an official who acted as a referee or umpire in the game being observed. All of the men who assisted in securing data in the survey were members of an officials' organization which held weekly meetings at the University of Missouri. The men were instructors, coaches and graduate assistants, most of whom were members of the athletic and physical education departments of the University of Missouri. At the weekly meetings held on Wednesday of each week, a typewritten form card, 4" by 6", was given to either the referee or to the umpire who had been assigned to work in the game to be observed. The procedure followed was to check in the appropriate space the information desired and return the card to the physical education office the following day. The notations were made as the game progressed and as the injuries occurred.

In order that objectivity might be established as to what was to be considered an injury, an injury was defined as: That condition of the player resulting from activity in the game, usually contact with another player, which necessitated the taking of time-out by the team captain in order that the player might recover or be removed from the game. If a time-out was not requested, no injury was recorded. No attempt was made to ascertain if the player had been previously injured in the game being observed. If the player was removed from the game, this fact was noted on the card form.

In selecting body regions in order to analyze the type of injury, the observers made no attempt to go into detail in reporting these injuries. Detail injury reports were not kept for two reasons; first observers were not trained in diagnosing details of injuries, and second, as is true in the case of many injuries, the correct diagnosis may not be made until special equipment is available. Injuries were reported as head and neck, arm and shoulder, chest and upper back, abdomen and lower back, leg and hip.

In determining the activity in which the player was engaged when injured, observers made no attempt to break down the activity of the game into the very specialized activities which are used in a game of football. It was thought that here, too, the major activities might be reported more accurately than detailed activities. The types of activity were

TABLE I

The High School, the Enrollment, and the Frequency of Observation of the Teams Included in the Survey of Football Injuries in Missouri High Schools—1941

| High School | 3 Year High School | 4 Year High School | Enrollment | Number of Times Observed |
|---|---|---|---|---|
| 1. Boonville | | X | 487 | 2 |
| 2. Brookfield | | X | 415 | 2 |
| 3. Carrollton | | X | 375 | 2 |
| 4. Centralia | | X | 256 | 6 |
| 5. Chillicothe | | X | 515 | 2 |
| 6. Columbia | X | | 638 | 5 |
| 7. Excelsior Springs | | X | 372 | 1 |
| 8. Fulton | | X | 460 | 5 |
| 9. Glasgow | | X | 180 | 2 |
| 10. Hannibal | X | | 698 | 3 |
| 11. Jefferson City | X | | 431 | 1 |
| 12. Kirksville | | X | 738 | 6 |
| 13. LaPlata | | X | 209 | 1 |
| 14. Louisiana | | X | 277 | 3 |
| 15. Macon | | X | 432 | 1 |
| 16. Marceline | | X | 279 | 5 |
| 17. Marshall | | X | 766 | 1 |
| 18. Mexico | X | | 513 | 8 |
| 19. Milan | | X | 324 | 2 |
| 20. Missouri Military Academy (Mexico) | | X | 164 | 3 |
| 21. Missouri School for Deaf (Fulton) | | X | 51 | 5 |
| 22. Palmyra | | X | 248 | 1 |
| 23. Roodhouse | | X | 211 | 1 |
| 24. Richmond | | X | 310 | 1 |
| 25. Sedalia | | X | 1227 | 1 |
| 26. Shelbina | | X | 257 | 2 |
| 27. Slater | | X | 252 | 3 |
| 28. St. Bonaventure (Marceline) | | X | 48 | 1 |
| 29. St. Joseph Central | X | | 1150 | 1 |
| 30. St. Peters (Jefferson City) | | X | 275 | 1 |
| 31. Wentworth Military Academy High School (Lexington) | | X | 126 | 1 |
| Total | 5 | 26 | | 80 |

TABLE II

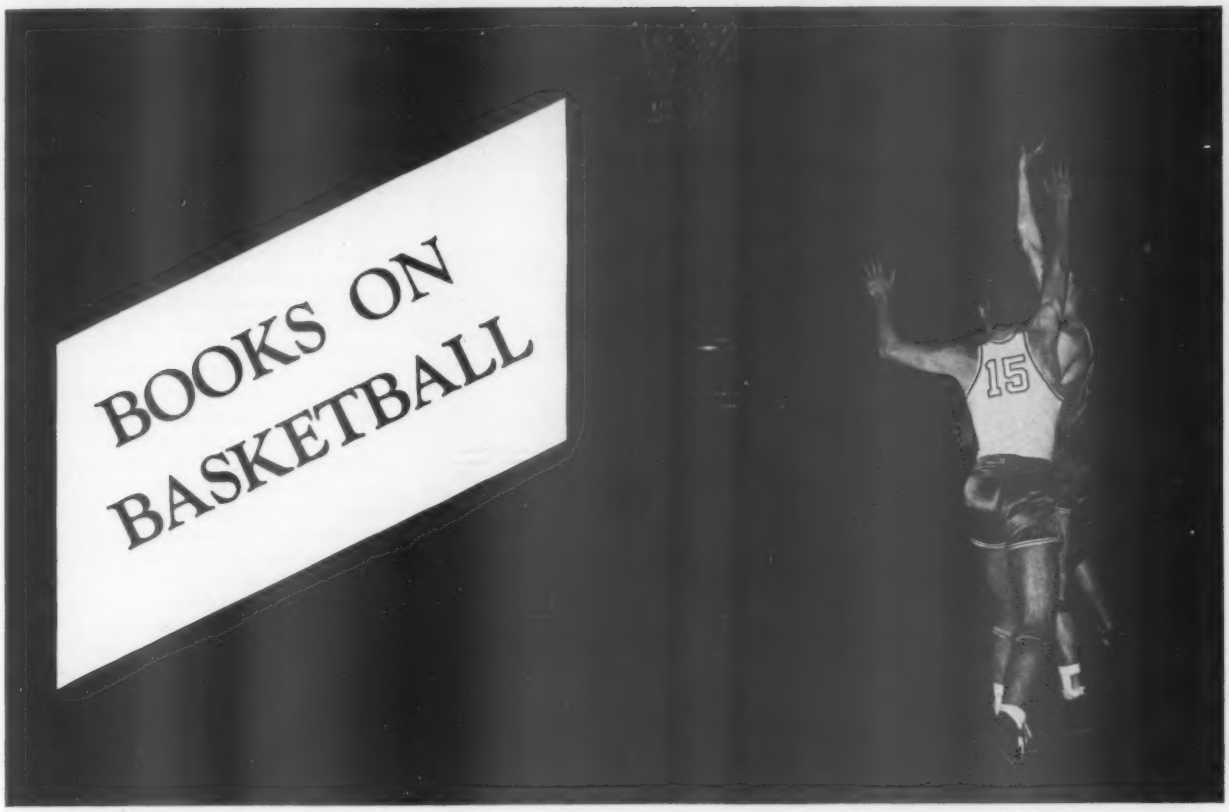
Distribution of the Number of Injuries in Missouri High School Football Games and the Number of Injured Players Removed from the Games

| Number of Injuries Per Game | Frequency | Number of Games from which Players Were Removed — Number of Players Removed Per Game: 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| 6 | 2 | | 1 | | | | | 1 |
| 5 | 3 | | | 1 | | 1 | | |
| 4 | 10 | | 1 | 1 | | 2 | | 6 |
| 3 | 8 | | 2 | 4 | | 2 | | |
| 2 | 9 | 1 | 3 | 5 | | | | |
| 1 | 5 | 2 | 3 | | | | | |
| 0 | 3 | 3 | | | | | | |
| Totals | 40 | 6 | 10 | 11 | 5 | 7 | 1 | 0 |

[1] J. H. Burnett and Fred J. O'Brien, "Survey of Football Injuries in the High Schools of Massachusetts," *Research Quarterly* IV (October, 1933), 91-98.

[2] Frank S. Lloyd, "Safety in Physical Education in Secondary Schools," *Research Quarterly* IV, (March, 1933), 5-8.

[3] N. P. Neilson, "The Nature, Frequency and Age Incidence in Interscholastic Football," *Research Quarterly* IV (October, 1933), 78-90.

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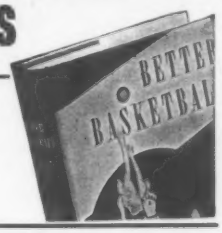


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classified as tackling, being tackled, blocking, and being blocked.

For the purpose of this study, it was thought that determining whether the man was injured in the open field or in the line would be sufficient answer to most of the questions that arise as to where injuries occur in relation to selected activities in the game.

Line play was defined as that area three yards on each side of the line of scrimmage and inside the position of the defensive ends.

Questions concerning the time during a game when injuries occur are many times raised around the fatigue factor. With this information in mind, it was decided to have the observer note when the injury occurred, in the first half or second half.

In each of the above situations it was deemed advisable to record the number of times the injured man left the game. This was not intended to measure the severity of the injury, but might be taken as some indication of the seriousness of the injury.

From September 18 to November 14, 1941, or a period of approximately eight weeks, thirty-one different high school teams were observed in forty football games. The range of the number of observations was from one to eight; the range of the enrollments in high schools which were observed was from 51 to 1227. All of the high schools were members of the Missouri State High School Athletic Association except one, the Roodhouse, Illinois, High School. The average enrollment of the Missouri high schools was 417.9 pupils, twenty-five of the schools were four-year high schools. This study included at least one observation of 22 per cent of the Missouri high schools that play football. (See Table I)

Of all the games that were played, none had more than six injuries occurring during the course of the contest, while three games were observed which did not produce a single injury. (See Table II) Each of the three games which did not have a single injury reported was played after the 31st of October, or in the last two weeks of the eight weeks of observation.

Roughly, 75 per cent of all the injuries that were recorded in the games fell into two classes, leg and hip, head and neck. Table III shows that the removals from the game for each of these two mentioned classes were approximately equal in percentage, there being fifty-four injuries with thirty-two removals for the leg and hip injuries and forty-one injuries with thirty-two removals for head and neck injuries. Of all the 114 players who sustained injuries, eighty, or 70.1 per cent were removed from the game.

More injuries occur as players are tackling and blocking than when they are tackled and blocked. Table IV shows that 58.7 per cent of all injuries occur while players are tackling and blocking, with only 38.5 per cent occurring while they are being tackled and blocked. Of the four major activities employed in playing football, being blocked produced only 1.3 per cent of the total injuries that occurred; tackling produced 30.8 per cent of the total injuries recorded.

Injuries that occur in the open field make up 60.5 per cent of all injuries that take place, while the remaining 39.5 per cent of the injuries happen in line play. (See Table V)

Table VI shows that approximately the same number of injuries occurred in the first half of the games observed as occurred

TABLE III

Frequency of Types of Injuries in Missouri High School Football Games—1941

| Body Region | Number of Injuries | Player Removed From Game |
|---|---|---|
| Leg and Hip | 44 | 32 |
| Head and Neck | 41 | 32 |
| Arm and Shoulder | 12 | 11 |
| Abdomen | 11 | 3 |
| Chest | 6 | 2 |
| Total | 114 | 80 |

TABLE IV

Injuries According to the Types of Activity in Missouri High School Football Games 1941

| Activity | Number of Injuries | Player Removed From Game |
|---|---|---|
| Tackling | 35 | 27 |
| Blocking | 32 | 25 |
| Being Tackled | 29 | 16 |
| Being Blocked | 15 | 11 |
| Running Into Umpire | 1 | 0 |
| Injury in Open Field—No Contact | 1 | 1 |
| Running Into Post—Outside Field | 1 | 0 |
| Total | 114 | 80 |

TABLE V

Injuries According to Place of Activity in Missouri High School Football Games 1941

| Place | Number of Injuries | Player Removed From Game |
|---|---|---|
| Open Field | 68 | 48 |
| Line | 45 | 32 |
| Outside of Field | 1 | 0 |
| Total | 114 | 80 |

TABLE VI

Injuries According to the Period of Play in Missouri High School Football Games 1941

| Period | Number of Injuries | Player Removed From Game |
|---|---|---|
| First Half | 53 | 37 |
| Second Half | 61 | 43 |
| Total | 114 | 80 |

TABLE VII

Relation of Type of Injury to Place of Injury in Missouri High School Football Games—1941

| Body Region | Number of Injuries | Place of Activity | | |
|---|---|---|---|---|
| | | Open Field | Line | Outside Field |
| Leg and Hip | 44 | 31 | 13 | |
| Head and Neck | 41 | 24 | 17 | |
| Arm and Shoulder | 12 | 6 | 6 | |
| Abdomen | 11 | 5 | 6 | |
| Chest | 6 | 2 | 3 | 1 |
| Totals | 114 | 68 | 45 | 1 |

TABLE VIII

Relation of the Types of Injuries to the Types of Activity in Missouri High School Football Games—1941

| Body Region | Number of Injuries | Type of Activity | | | | |
|---|---|---|---|---|---|---|
| | | Tackling | Being Tackled | Blocking | Being Blocked | All Others |
| Leg and Hip | 44 | 11 | 11 | 8 | 12 | 2 |
| Head and Neck | 41 | 15 | 13 | 11 | 2 | |
| Arm and Shoulder | 12 | 4 | 1 | 6 | 1 | |
| Abdomen | 11 | 2 | 4 | 5 | | |
| Chest | 6 | 3 | | 2 | | 1 |
| Totals | 114 | 35 | 29 | 32 | 15 | 3 |

TABLE IX

Number of Injuries Occurring in Relation to Progress of the Season in Missouri High School Football Games—1941

| Month | Number of Games Played | Number of Injuries | Number Removed from Game | Average Number of Injuries Per Game |
|---|---|---|---|---|
| September | 8 | 25 | 14 | 3.12 |
| October | 22 | 72 | 53 | 3.27 |
| November | 10 | 17 | 13 | 1.70 |
| Totals | 40 | 114 | 80 | 2.85 |

in the second half. Of the total number of injuries, 47 per cent occurred in the first half and 53 per cent occurred in the second half of the games.

Certain types of injuries are more likely to happen in the open field than in line play. Table VII shows that 70.4 per cent of all leg and hip injuries occur in the open field while only 33.3 per cent of the chest injuries occur there. Of the head and neck injuries, 58.5 per cent were in the open field and 50 per cent of the arm and shoulder injuries also took place there.

When injuries were analyzed from the point of view of the activity which produced the injury, it was found (Table VIII) that the distribution of injuries to the leg and hip was about evenly divided among four types of activity. Of the forty-four leg and hip injuries, 25 per cent occurred while the player was tackling, 25 per cent while he was being tackled, 18.1 per cent while he was blocking, and 27.5 per cent as a result of being blocked. None of the injuries to the chest occurred while the player was being tackled or blocked.

Of all the games observed, eight were played in September, twenty-two in October, and ten in November. Twenty-five injuries occurred in the September games, or 3.12 per game. In October there were seventy-two injuries which gave an average number of injuries per game of 3.27. In November the seventeen injuries produced an average of 1.7 injuries per game.

The findings in this study seem to justify the following general conclusions:

1. That an average of 2.85 injuries per game is not excessively high, especially when 29.9 per cent of the injured players remained in the game.
2. That blocking and tackling are considerably more hazardous than being blocked and being tackled.
3. That injuries to the leg and hip, head and neck account for a high percentage of all the injuries that occur to the different body regions.
4. That the difference is not significant, in the number of injuries that occur in the first and second half. That the number of injuries that occur in the open field are appreciably greater than the number that take place in line play.
5. That injuries affecting the leg and hip and the head and neck will be much more likely to happen in the open field than in line play, while injuries that affect the arm and shoulder, abdomen and chest will likely occur as often in line play as in the open field.
6. That leg and hip injuries occur in about the same frequency, regardless of the type of activity; that this statement is also true for head and neck injuries, except that a very small number of head and neck injuries occur while the player is being blocked. The chest and abdomen are not likely to be injured while the play-


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er is being blocked. (See Table VIII)

7. That about as many injuries occur per game during September as in October, but that in November the number of injuries per game decreases very noticeably.

Recommendations:

1. A longer pre-season training or practice period.

2. Immediate removal from the game of any player for whom time-out was taken.

3. The establishment by state high school athletic associations of research divisions that will procure through registered officials pertinent information concerning injuries.

4. A greater number of time-outs during a football game.

This study has brought out several problems for further investigation: 1. A similar study at the college level. 2. A combination observation-questionnaire study of injuries. 3. A more detailed study of the types of injuries. 4. A study of injuries that occur during practice periods. 5. A state-wide study of football injuries in Missouri. 6. A study of injuries in other interscholastic sports.

# Football Offense of 1941 in the High Schools

THIS article is a continuation of the review of 1941 football offense begun in the November issue.

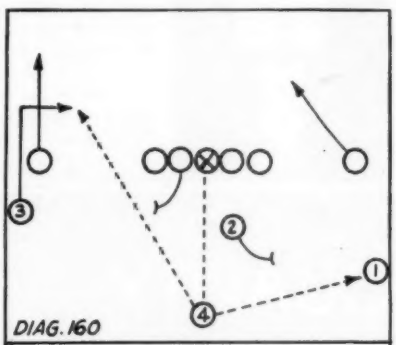
### *Tennessee*

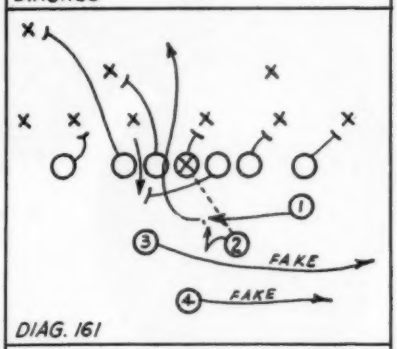
Diagram 160 is a wide-spread play. Four throws a quick pass to 3, or, if he is covered, tosses it to 1. This play has to be exceptionally fast for the passer to get the pass off. Diagram 161 is a trap play on the right guard from a semi-punt formation. Two fakes to 3 and hands the ball forward to 1. Diagram 162 is a reverse-pass play from a semi-punt formation. One is in motion with the ball snapped just after he passes in front of 3. Three drives into the line, handing the ball to 4 who passes to the left end. In Diagram 163, 3 on a spin gives the ball to 1 who goes wide to the left.

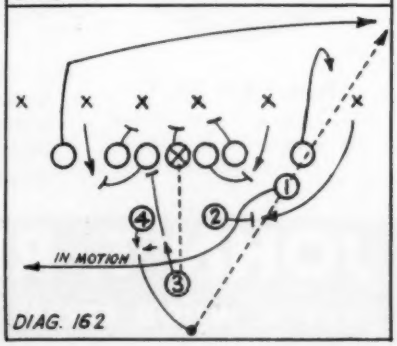
Diagram 164 is run from a single-wing unbalanced line. The ball is passed to 4 who goes to the right, faking an end run and passes to the left end who may lateral to 1. In Diagram 165, 4 fakes a pass to the right end who button-hooks back and throws to 1 who has cut out and down the field. Diagram 166 is a cross-blocking play with the fullback going inside tackle. In Diagram 167 the fullback starts wide, handing the ball to the wing-back who laterals to the tail-back.

### *Texas*

Diagram 168 is a shovel-pass inside tackle with an option. If the linebacker and the halfback do not follow the end and 4, the passer can throw to them. Diagram 169 is the same play against a 5-3-2-1 defense. The left tackle turns out to block his man, the right guard comes around to help the left tackle or leads the play, driving into the secondary. Diagram 170 is a pass from a double wing. Three spins, fakes to 4 and 2, then laterals to 1 who throws a flat pass to the left end who has shot into the flat after a shoulder block on the tackle. Diagram 171 is the same play to the right. Diagram 172 is a guard-around from a single-wing unbalanced line. Three drives into the line and hands the ball backward to the left guard who goes wide. Diagram 173 is a single-wing pass play to the flat. Three spins and hands the ball to 1. Four runs to the left then cuts back and takes a lateral from 1. The right end throws a hard shoulder block on the tackle and then runs into the flat for the pass. Diagram 174 is an optional pass from a modified double-wing formation. The blocking back, 2, screens the defensive end and cuts over the defensive fullback's position. He and the left end are the favorite receivers. Diagram 175 is a forward lateral from a short-punt formation. The left end takes three steps across the scrimmage line, pivots left and comes down the line of scrimmage. After receiving the pass he continues running and laterals to 3 who has checked the defensive left end for three counts.




### *Utah*

Diagram 176 is an end run from T formation. Four is in motion. Two spins and laterals to 3 who goes wide. Diagram 177 is an optional pass from the T formation. Four is in motion. In this play there are four possible receivers.

### *Vermont*

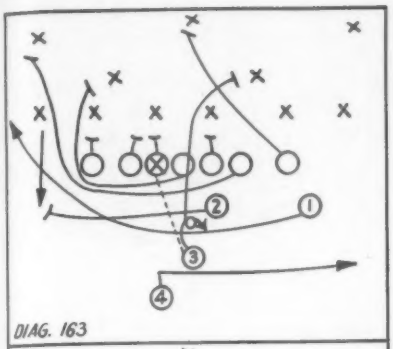
Diagram 178 is a weak-side spinner from a single wing. Three receives the ball from center, half spins, and fakes to 4. Three completes the spin and drives outside the weak-side tackle. The T is not being used any more this season than last in Vermont.

### *Virginia*

Diagram 179 is a pass play to the right end. The end drives down as if to block the safety, then cuts behind the halfback. The play starts as an end run. Diagram 180 is an end run from the T formation. One is in motion. Diagram 181 shows 2 faking to 3 and giving the ball to 4 who goes inside tackle.

### *Washington*

Diagram 182 is a forward pass following a lateral from the T formation. One shows a long lateral to 2 who may throw a long pass to the right end or pass to either 3 or 4. Both 3 and 4's primary assignment is to protect the passer, their secondary assignment is to get clear for a pass. Dia-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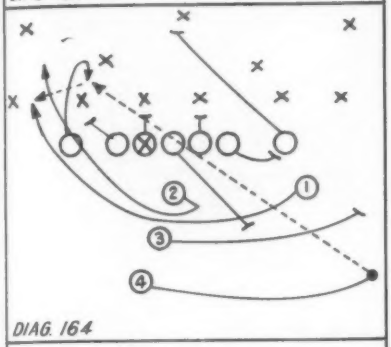
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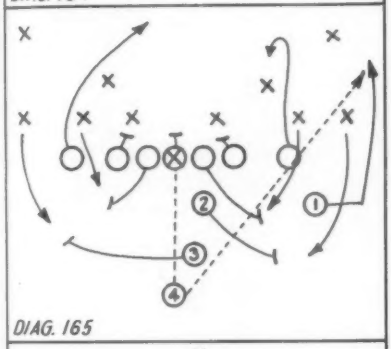
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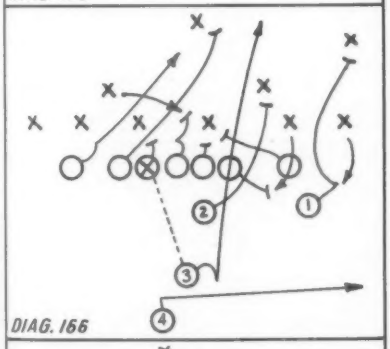
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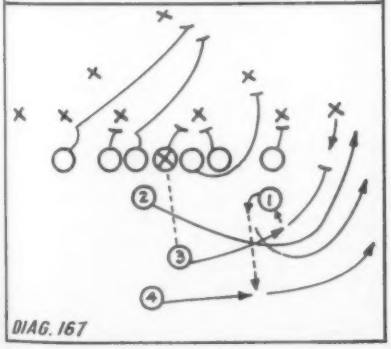
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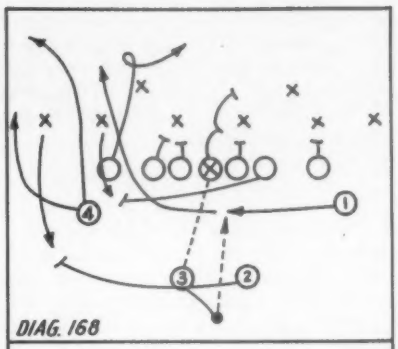
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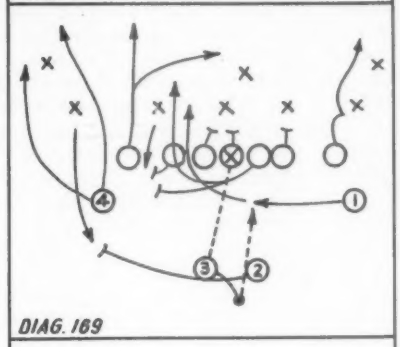
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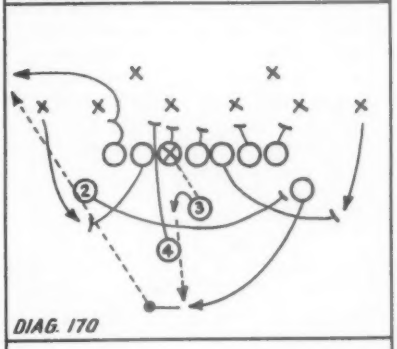
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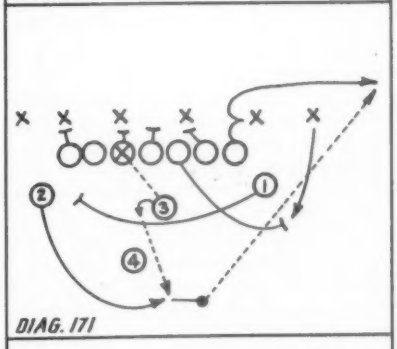
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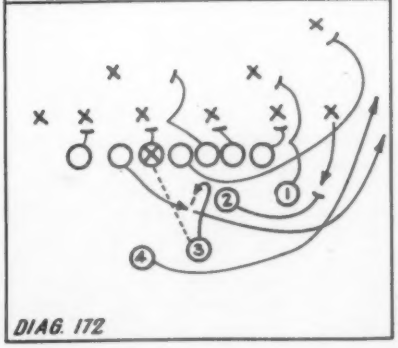
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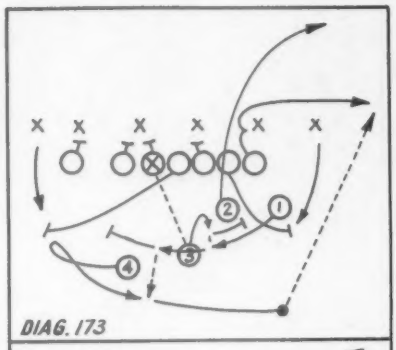
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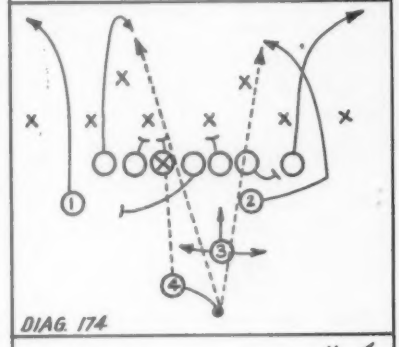
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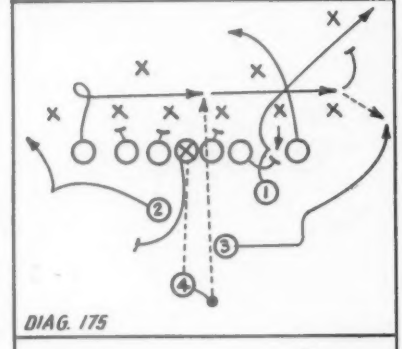
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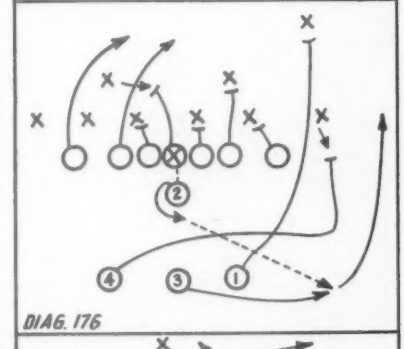
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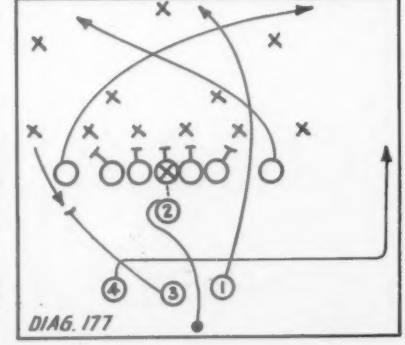
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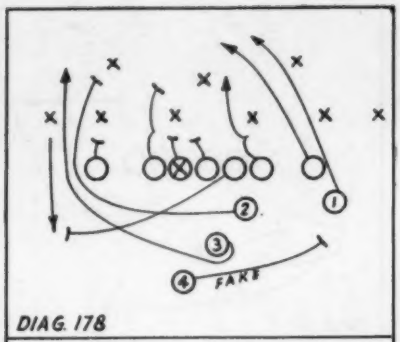

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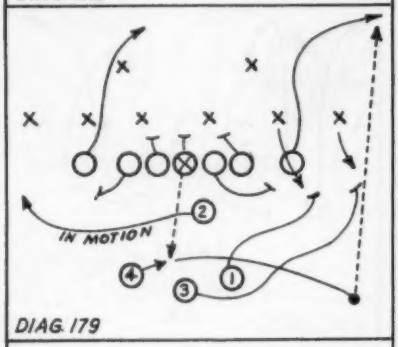

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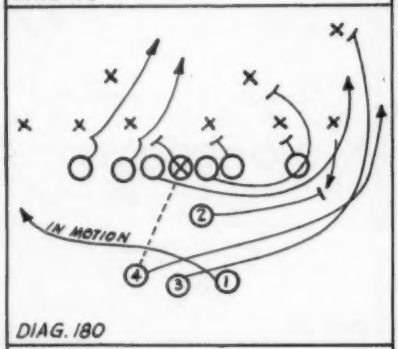

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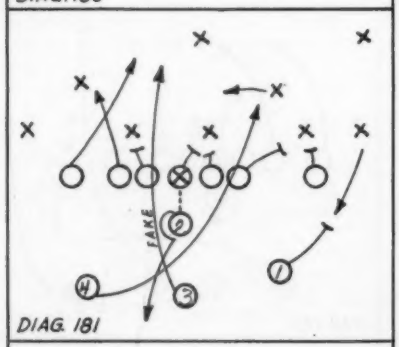

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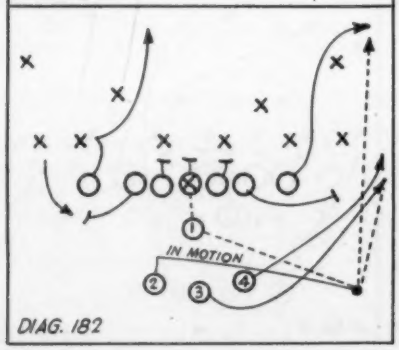


DIAG. 182

gram 183 is a weak-side pass from a semi-punt formation. The ball is passed to 3 who fakes the pass to the right end, then throws to 4 in the flat. One bumps the defensive left end and goes into the flat as a possible receiver.

### *West Virginia*

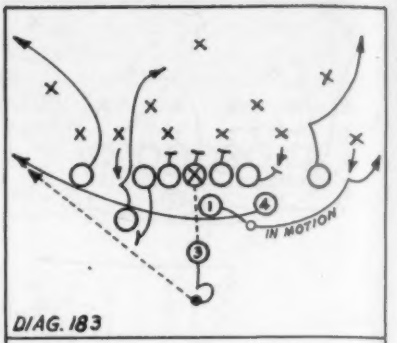
In Diagram 184 the right end and 1 team on the tackle. Three spins and drives off tackle with a possible lateral to 4. Diagram 185 is a spinner inside tackle. The outside tackle and 2 double-team the defensive left tackle. The defensive left end is kept out of the play by the threat of 4 receiving the ball. Diagram 186 is a mouse-trap on the short-side tackle. Three spins, faking to 4, and hands the ball forward to 1. Diagram 187 is a fake pass and run play. Four fades and fakes to the right end. The short side tackle charges past to rush the passer and is nicely trapped by 2 and 3. Four then runs through the spot vacated by the tackle. Diagram 188 is a quick pass with a lateral. The left end goes down field five yards, turns and takes a pass from 4 who fades one step before throwing. Three fakes a block on the defensive right end and goes wide to take a lateral. Diagram 189 is an off-tackle slant from a modified punt. Four drives forward in order to set up the blocking, then slants off tackle. The right end and 1 team on the tackle while the right guard and 2 team on the end.

### *Wisconsin*

Diagram 190 is an end run in which speed and sharp blocking are emphasized. One throws sharp block on the right end. Three spins and gives the ball to 4 who runs wide. Diagram 191 is a reverse inside the defensive right end. Two blocks the end out while both guards pull out to lead the play. Diagram 192 is a pass play from the wide end run shown in Diagram 190. Diagram 193 is a fake buck and end-around from a punt formation. Three drives into the line, handing the ball to 1 who laterals to the right end. This play which has scored many touchdowns, is set up by a buck-at-center play. Some of the smaller schools in Wisconsin have adopted the T formation. There seems to be less use made of the lateral than formerly.

### *Wyoming*

In Diagram 194, 3 spins, handing the ball to 4 who hits inside guard. Three carries out the fake, fading back as though to pass. Diagram 195 is a spin inside the weak-side tackle. In Diagram 196, run from short punt, 3 half-spins and fades back. He has three potential receivers to whom to pass. Diagram 197 is a fake spinner to the 1 back and a lateral to the tail-back running wide. Two blocks the left end. Diagram 198 is a sequence pass



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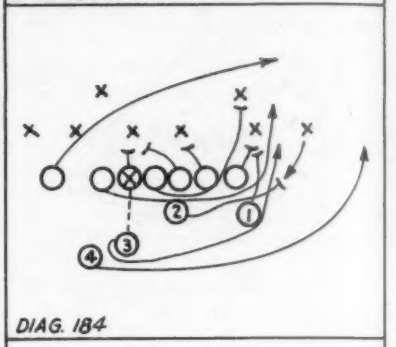
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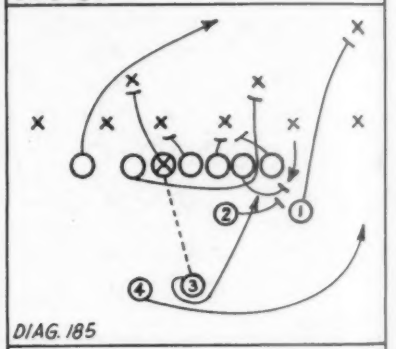
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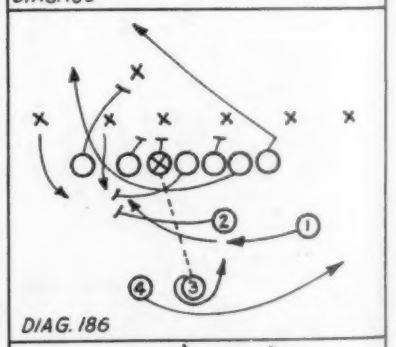
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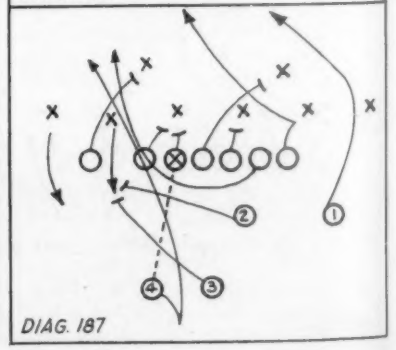
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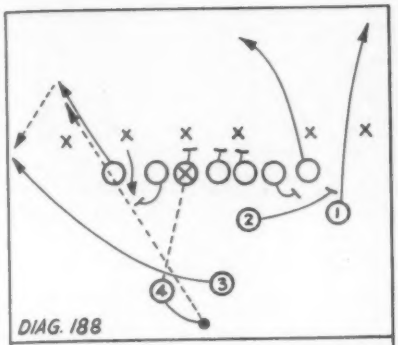
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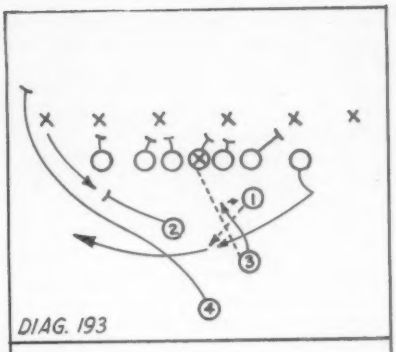
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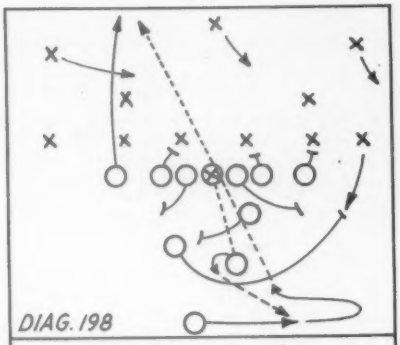
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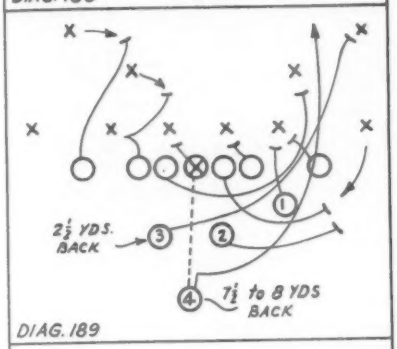
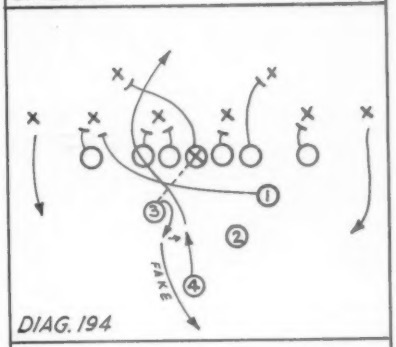
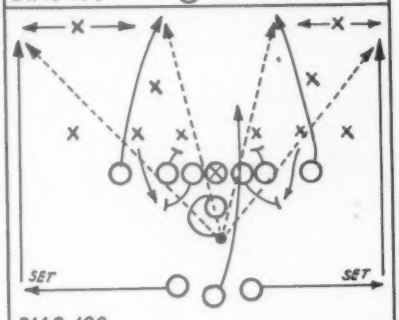
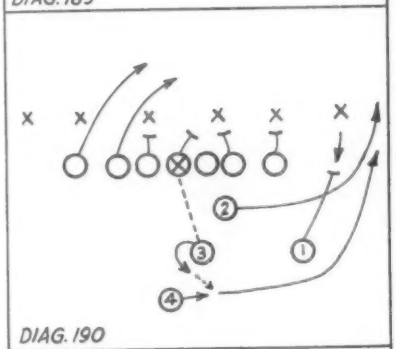

2½ YDS. BACK
7½ to 8 YDS BACK
DIAG. 189


FAKE
DIAG. 194


SET
SET
DIAG. 199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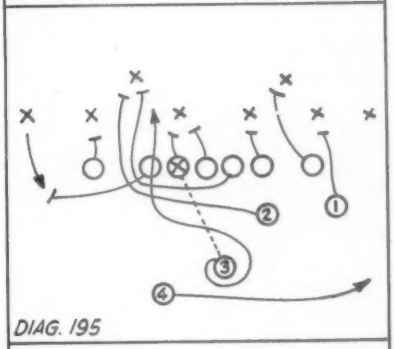
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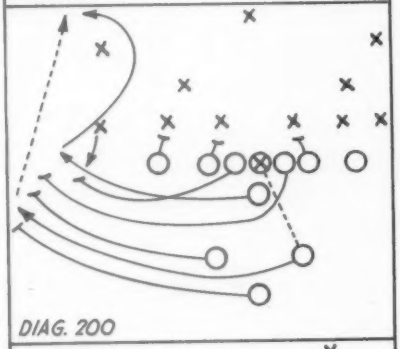
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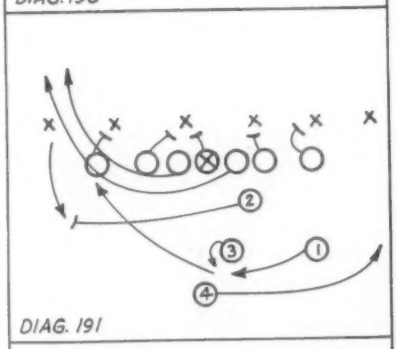
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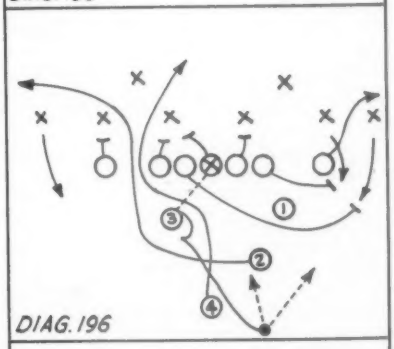
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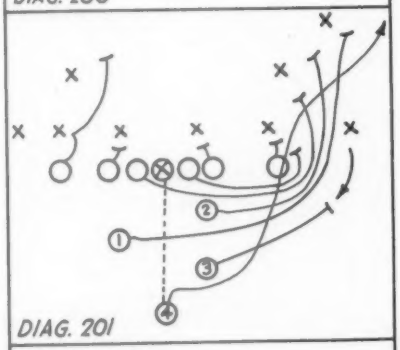
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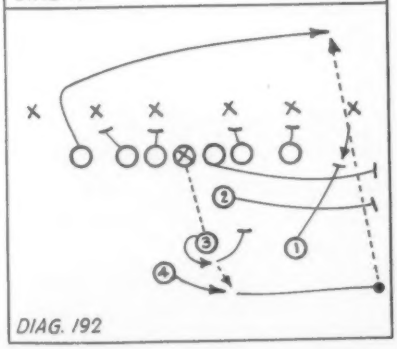
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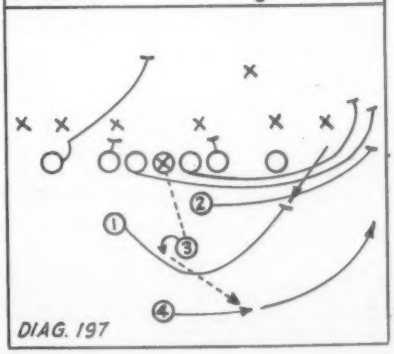
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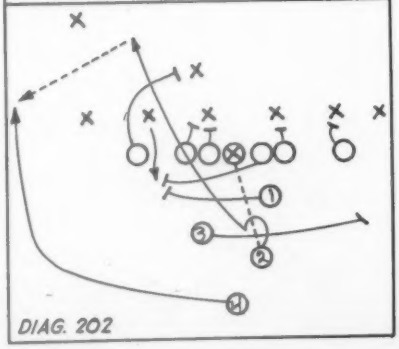
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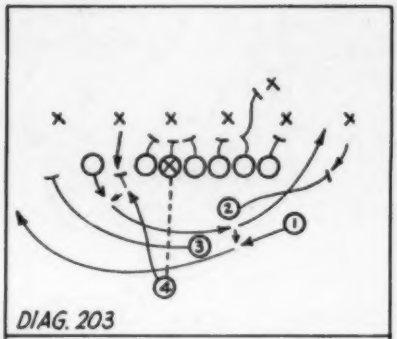

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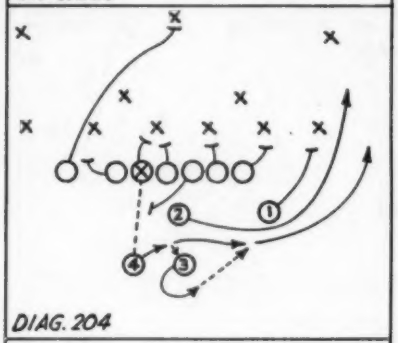

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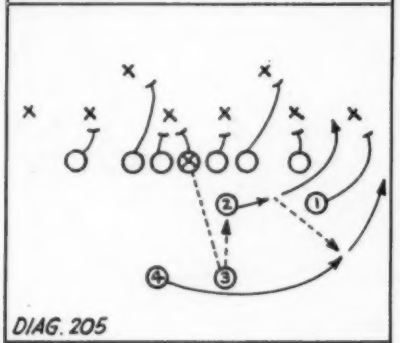

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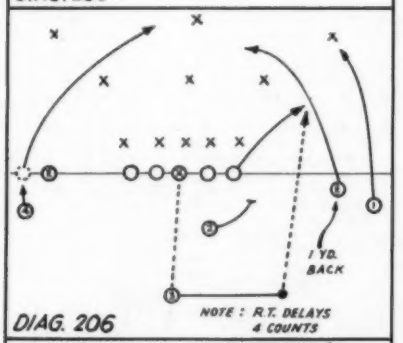


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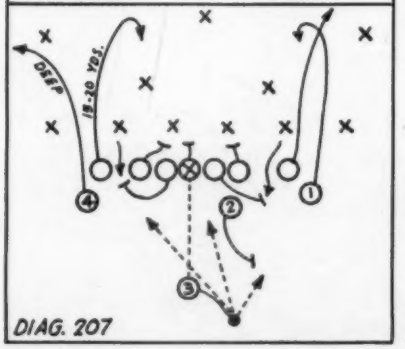



DIAG. 207

play to the one shown in preceding Diagram 197. The tail-back cuts back and throws a long pass to the left end. Diagram 199 is a pass play from the T formation. The halfbacks are in motion. The fullback fakes over guard. The quarterback passes to ends or halfbacks. Diagram 200 is a running pass play off an end run from the T formation. The quarterback is in motion, getting set just outside the end. In Diagram 201, 4 goes off tackle with the guards and 1 and 2 leading the play. In Diagram 202, 3 spins, faking to 2 and then drives inside tackle. The lateral to 4 is optional.

### *Delaware*

In Diagram 203, the ball is snapped to the 4 back who drives over tackle, handing the ball to the left end for an end-around. The end hands the ball to 1 for a reverse to the weak side. In Diagram 204, 4 hands the ball to 3 who fades a few steps and shoots a shovel pass back to 4 who goes wide outside.

### *Indiana*

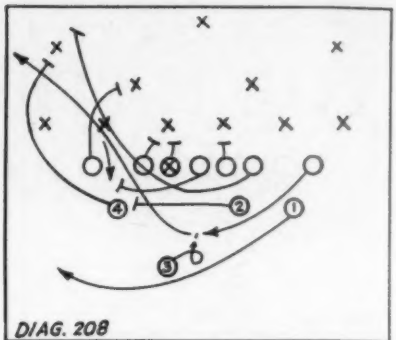
In Diagram 205, the fullback 3 drives into the line, handing the ball to the blocking back who has the option of hitting outside tackle or lateraling to 4. Diagram 206 is an optional pass or run from a spread formation. Four shifts into the line while the right end remains back. The right tackle then becomes eligible. In Diagram 207, 4 and the right end go deep while the left end and 1 button-hook back after going out fifteen or twenty yards. Diagram 208 is an end-around from a modified double-wing and involves a tricky exchange between the tailback and the end. The ball is handed forward by the tailback with his back to the line. The pass is made with the right hand after the spin to the wing-back.

### *Massachusetts*

Diagram 209 is an end crisscross pass play run from deep punt formation. Two gives the ball to 4 who laterals to 3 who throws deep to the left end. The pass play in Diagram 210 is made from a deep kick formation. The ball is passed to 3 who forward passes to the right halfback. The defensive right end is pulled in while the left end serves as a decoy.

### *Vermont*

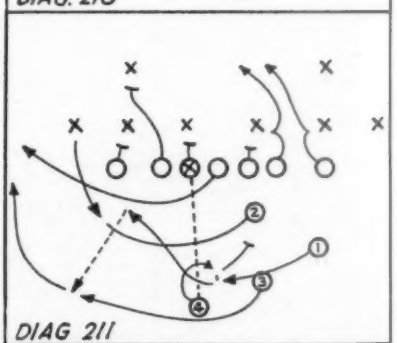
In Diagram 211, the wing-back runs with the ball on a reverse outside tackle. When he runs into trouble he jumps and throws a two-handed basketball pass to the tail-back who has gone wide after his fake for the ball. Diagram 212 is a fake plunge with a reverse and lateral. Two fakes to 3 and gives the ball to 1 who goes wide and laterals to 4.



DIAG. 208

DIAG. 209

DIAG. 210



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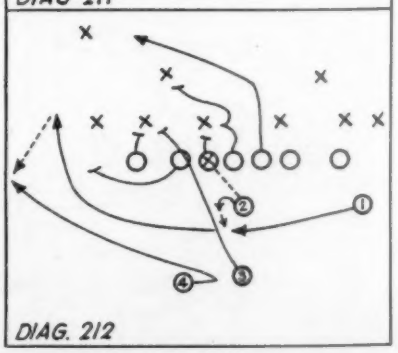

DIAG. 212

# THE NATIONAL COLLEGIATE ATHLETIC ASSOCIATION ANNUAL MEETINGS

## THE BOOK CADILLAC HOTEL, DETROIT

## DECEMBER 29, 30, 31

**MONDAY—December 29**

4:30 P.M.—Executive Committee Meeting

7:00 P.M.—Council Dinner

**TUESDAY—December 30**

10:00 A.M.—Joint meeting with Football Coaches Association
Suggested topic: "Competitive Athletics; Their Contribution in a Crisis."

12:30 P.M.—Luncheon

3:00 P.M.—Small College Round Table
Subject: "How can the members of the athletic department aid the prospective selectee?"

Note: The subject for the Small College Round Table will be attacked from three aspects, the discussion being launched by ten-minute informal talks. President Thurston J. Davies, will speak from the viewpoint of the general morale; Ellwood A. Geiges, assistant to John B. Kelly, of "Hale America," will speak from the viewpoint of physical fitness; and Lieutenant Colonel Harold A. Furlong, of the Michigan Defense Council and member of the Medical Corps of the National Guard, will speak from the viewpoint of the medical examination. Mr. Henry W. Clark of Lafayette College and Professor O. K. Cornwell, University of North Carolina, president of the College Physical Education Association, will preside.

**WEDNESDAY—December 31**

9:30 A.M.—Morning business session

12:30 P.M.—Luncheon to honor Fielding Yost

2:30 P.M.—Afternoon business session.

**Those wishing to travel from Chicago in a group should communicate with**

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Reach, Wright & Ditson.....15 ☐ Winter Catalogue
Spalding & Bros., A. G..... 1 ☐ Winter Catalogue
Wilson Sporting Goods Company 23,37 ☐ Winter Catalogue

**SHOES**

Witchell-Sheill..... 4 ☐ Catalogue

**CLOTHING**

Kahnfast Satins.....26 ☐ Swatch and names of manufacturers featuring these fabrics

**MEDICAL**

Absorbine, Jr.....22 ☐ Information
Chattanooga Pharmacal Co.....34 ☐ Information
Denver Chemical Mfg. Co.....35 ☐ Booklet "Athletic Injuries"
Huntington Laboratories, Inc....Cover 2 ☐ Information on Derma-San
Lang Foot and Arch Normalizer.....34 ☐ Information

**BASKET BALLS**

Riddell, Inc., John T.....41 ☐ Information and prices

**RUBBER COVERED BALLS**

Voit Rubber Corp., W. J.....26 ☐ Catalogue

**GAMES**

Medart Mfg. Co., Fred.....41 ☐ Information on Goal-Hi

**BOXING RINGS AND MATS**

National Sports Equipment Co.....26 ☐ Information

**BASEBALL AND SOFTBALL BATS**

Hillerich & Bradsby Co.....17 ☐ Catalogue

**CHENILLE LETTERS**

Johnson Co., Richard M.....26 ☐ Individual Embroidered Nameplate

**RECONDITIONING OF ATHLETIC EQUIPMENT**

Ivory System.....Cover 4 ☐ Information on Ivory System Service

**BASKETBALL BOOKS**

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(Note these books may be ordered and books will be sent C.O.D. or check may be sent to us.)

Basketball by Carlson..... ☐ 1 copy at $2.00
Better Basketball by Allen..... ☐ 1 copy at $4.00
Fundamentals of Basketball by Daher.. ☐ 1 copy at $1.50
Practical Basketball by Lambert..... ☐ 1 copy at $2.00

**OTHER BOOKS TO BE BILLED**

Baseball Coaching Kit.....36 ☐ $1.75
Baseball Instruction Course.....36 ☐ $ .75
Data Sheets.....36 ☐ $ .50

## WHAT YOU WILL NEED

**SCOREBOARDS**

Fair Play Mfg. Co.....24 ☐ Catalogue

**BANKBOARDS**

Medart Mfg. Co., Fred.....25 ☐ Catalogue
Porter Corp., J. E.....19 ☐ Catalogue

**PROTECTIVE PADS**

Rite Canvas Products Corp.....24 ☐ Price Circular

**BLEACHERS**

Leavitt Corp.....24 ☐ Literature and Layout Service
Universal Bleacher Co.....25 ☐ Informative Bulletins

**FLOOR FINISHES**

Floorcraft Laboratories, Inc.....24 ☐ Information on Protecto-Seal
Huntington Laboratories, Inc.....25 ☐ Information on Seal-O-San

Numbers following name of manufacturer refer to page on which advertisement appears.

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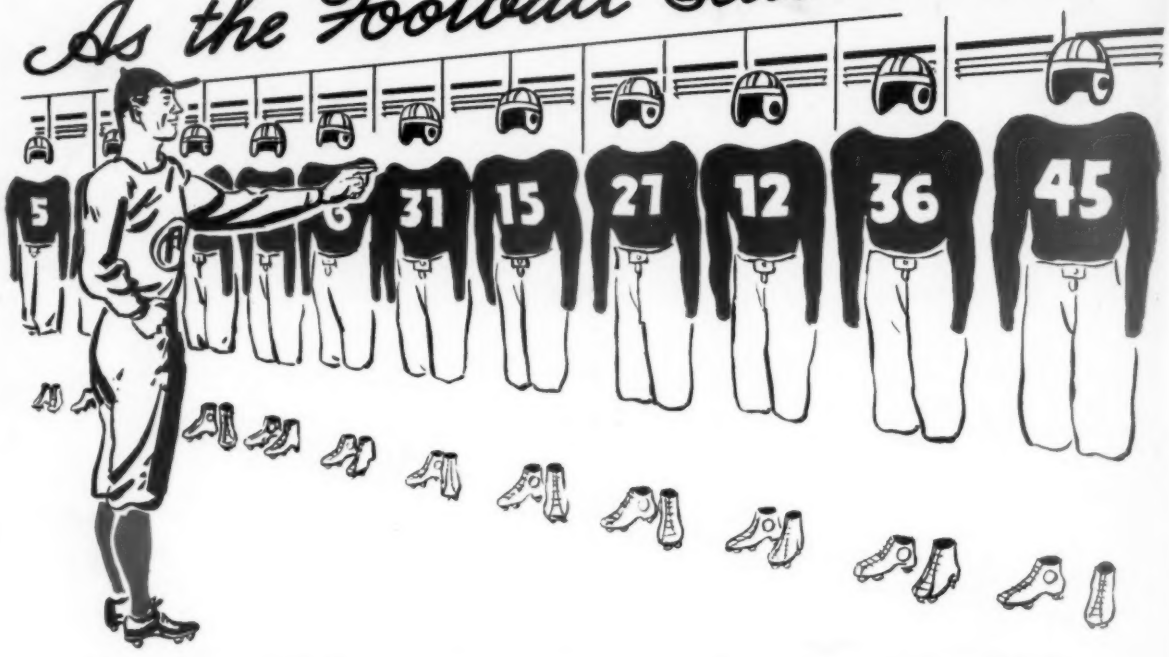


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